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A SYSTEMATIC REVIEW AND META-ANALYSIS OF ACCEPTANCE AND
COMMITMENT THERAPY IN SOUTH KOREA

by

Woolee An

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Psychology

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2020

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ABSTRACT

A Systematic Review and Meta-analysis of Acceptance and Commitment Therapy
in South Korea

by

Woolee An, Doctor of Philosophy

Utah State University, 2020

Major Professor: Dr. Mike. E. Levin
Department: Psychology

Although the importance of considering cultural contexts in treatment and examining treatment efficacy for various populations have been highlighted among researchers for decades, research still tends to heavily focus on testing treatment efficacy by using English-speaking populations in the U.S. and Western countries. Furthermore, although study findings from non-Western countries exist, the findings are not fully communicated due to language differences. One prominent example is Acceptance and Commitment Therapy (ACT) studies in South Korea. Although numerous treatment studies using ACT have been published in South Korea in the past decade, most of the studies are still unknown to English-speaking researchers because of language differences. Therefore, to promote cross-cultural communication in psychology, the present study involved a systematic and meta-analytic review of ACT research in South Korea.

A comprehensive literature search identified 62 eligible studies, including 31 Randomized Controlled Trials (RCTs), 28 quasi-experimental studies, and three laboratory studies. Reviews of the literature indicated that ACT has been found effective for various psychosocial problems in South Korea. The meta-analysis revealed that the overall effect sizes ($g = 1.33$, 95% CI = 1.08, 1.58, $p < .001$, $k = 31$, $n = 4245$, $I^2 = 51.40$) were significant and large favoring ACT with moderate heterogeneity. Large effect sizes were observed from different time-points, various problem areas, and sample groups. Although the current study also found some cultural adaptation in the Korean context, further investigation is needed to promote considering cultural context in South Korea. Based on the results of the review, the current efficacy of ACT in South Korea is promising.

(150 pages)

PUBLIC ABSTRACT

A Systematic Review and Meta-analysis of Acceptance and Commitment Therapy
in South Korea

Woolee An

Although psychologists have emphasized the importance of considering clients' various cultural backgrounds and researching various populations, research is still overly focused on participants from English-speaking countries like the United States and Western countries. Numerous studies evaluating Acceptance and Commitment Therapy (ACT) have been published in South Korea. However, most of the studies are still unknown to English-speaking research communities because of language differences. In order to promote cross-cultural communication of study findings, the current study reviewed treatment research from South Korea.

After searching for Korean ACT studies using Korean electronic databases, 62 studies were selected, and each study's treatment outcome and characteristics were reviewed. To examine the effectiveness of ACT in South Korea, the outcomes were quantified and analyzed statistically. To explore how ACT was adapted to Korean culture, the treatment protocols were reviewed. The overall results indicated that ACT has been found effective for various psychosocial problems in South Korea. Furthermore, the review of ACT protocols revealed that therapy content was minimally adapted to Korean populations. Further research is needed to investigate the effects of cultural adaptation of ACT in South Korea.

DEDICATION

I would like to dedicate this dissertation to my mother who was the most incredible, wise, and beautiful human being that I have ever met in my life. She was a warm, bright, kind, and amiable person. She sacrificed for my family and me and always tried to provide better educational opportunities for my brothers and me without being a tiger mom. She believed in my brother and me while raising us to embrace adventures and challenges. Her trust and empowerment became my major source for enduring any hardships while pursuing my education journey. She inspired me to be a better and kinder person, which led me to think about what a good psychologist is. Words fail to describe how much it broke my heart when I lost you. But the memories with you and life lessons that I learned from you still stay with me. I will continue to carry your legacy with me in my heart. I love you so much, my dear mom.

Woolee An

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cutest nephew in the world, Suho. I am very proud of you. I could not have done it without all of you and love you all. I would like to express my gratitude to my extended family. My grandmother who went through so many difficulties and witnessed all the significant historical events inspired me in so many ways. And thank you to my aunts who constantly prayed for me throughout my journey.

Woolee An

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CHAPTER I

INTRODUCTION

Mental health issues are a significant worldwide health concern. Almost one in 10 people have a mental health disorder according to the World Health Organization (WHO, 2016). In addition, psychological disorders have become a global cause of disability that accounts for 37% of all healthy life years lost due to diseases (Wang et al., 2007). More than 70% of people in the world do not receive proper mental health services (Wainberg et al., 2017). In order to deal with this issue, several global mental health projects have been launched, such as the Mental Health Atlas Project in 2001 and the Mental Health Gap Action Programme Intervention Guide (mhGAP-IG) launched by the WHO in 2008. Clarifying how to provide effective mental health care and meet the needs for mental health treatment have become important tasks for global mental health.

In order to provide effective treatments globally, the importance of understanding cultural differences in the presentation of psychological symptoms and various cultural contexts in treatments have been emphasized in treatment research (Cardemil, 2010, 2015; Spilka & Dobson, 2015). However, research in psychology has still overly focused on testing treatments with English-speaking populations in the U.S. and Western countries (Arnett, 2008). This may be heightened by language barriers between English speaking and non-English speaking countries when considering the English language requirements in Western psychological research. However, considering the importance of understanding global variations in human behaviors, societal norms, cultural values, and other factors (APA, 2017), conducting cross-national and cross-language studies should be a high priority to inform each country's own cross-cultural and multicultural

understandings.

Acceptance and Commitment Therapy (ACT) has been an internationally utilized treatment approach. The efficacy of ACT has been examined for a wide range of behavioral health issues including, anxiety, depression, eating disorders, substance abuse, self-harm, academic concerns, social concerns, stress and burnout, stigma and prejudice related issues, and psychosis (Bluett et al., 2014; Hayes et al., 2006; Ruiz, 2010).

Although ACT was established in the U.S. and mostly studied in the U.S. and Western countries, ACT has recently received significant research and clinical attention in non-Western countries. However, relatively few research findings from non-Western countries have been introduced in English literature reviews (i.e., Hayes et al., 2011; Tol et al., 2018). Additionally, although a substantial amount of research on ACT has been published in South Korea, the Korean ACT studies have not been reviewed and included to Western countries. When considering the unique cultural contexts related to mental health issues in South Korea, such as higher prevalence rates of mental disorders (Cho et al., 2015), higher suicide rate (OECD, 2020), higher stigma toward mental health services (Park et al., 2015), lower utilization of mental health services (Cho et al., 2009), and lower mental health literacy (Jeon & Furnham, 2017) compared to other developed countries, reviewing the research findings of ACT in South Korea may contribute to the discussion of diversity in a research setting. Therefore, in order to promote cross-cultural research findings in ACT to ensure the generalizability of findings (Henrich et al., 2010) and achieve transparency and accuracy in science, this study seeks to conduct a systematic and meta-analytic review of Korean ACT studies.

CHAPTER II

LITERATURE REVIEW

This literature review will cover the importance of considering cultural contexts in treatments, the tendency of focusing on Western countries in research, and language barriers in psychology research while highlighting the importance of cross-cultural treatment research. The current state of psychology and mental health issues in South Korea will be introduced. Then, Acceptance and Commitment Therapy and the necessity of reviewing ACT in South Korea will be discussed.

Cultural Contexts in Treatments

There is widespread agreement that cultural context is an essential variable for understanding human behavior. Culture can be defined as “belief systems and value orientations” (American Psychological Association; APA, 2017) and an individual’s worldview that is closely intertwined with one’s life experiences and the way a person interacts with the world (Pedersen & Ivey, 1993). Cultural elements include social norms, roles, and beliefs (Triandis et al., 1980), which can be specified as familiar roles, communication patterns, affective styles, values including individualism, collectivism, spirituality, religiosity, and personal control that influence human behavior (Betancourt & López, 1993). Therefore, it is difficult to put aside culture from human behavior.

Cultural contexts in treatments have gained tremendous attention for at least two decades. Increasing awareness of cultural factors and understanding clients’ contexts are highly recommended as ways to promote multi-cultural/cross-cultural competence (APA, 2003, 2017). Moreover, the APA Presidential Task Force on Evidence-Based Practice (2006) defined Evidence-Based Practice in Psychology (EBPP) as “the integration of the

best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (p. 5) which introduced culture as one of the core components of effective treatment

Research has highlighted the importance of tailoring Evidence-Based Treatments (EBT) for specific groups (Bernal et al., 2009; Hall, 2001). The definition of cultural adaptation is the systematic modification in treatments that account for clients’ culture, language, and context (Bernal et al., 2009). Although many models of cultural adaptation exist, the most used one is the ecological validity model (Bernal et al., 1995). According to the model, cultural adaptation can be made by taking into account eight dimensions: language, people, metaphors, content, concepts, goals, methods, and context (Bernal et al., 1995). In other words, cultural adaptation involves considering cultural background and spirituality, matching ethnicity and language between clients and therapists, translating materials or adapting language, incorporating cultural values, beliefs, and symptoms in treatment, collaborating with or being advised by ethnic others, adapting treatment time or service, and discussing and clarifying therapeutic relationships and communication (van Loon et al., 2013; Soto et al., 2018).

Research findings indicate that culturally adapted interventions are more effective than interventions without cultural adaptation. For example, a meta-analysis on culturally adapted mental health interventions with 99 studies revealed a moderately strong effect size (Hedge’s $g = 0.50$) compared to traditional mental health interventions without adaptation (Soto et al., 2018). In terms of specific cultural adaptations, 75% of all studies introduced cultural values/concepts into the intervention, 55% of all studies matched client-therapist ethnic/racial group, and 75% of the studies used clients’ preferred

language (non-English; Soto et al., 2018). Another recent meta-analysis included 13,988 participants in 78 studies, 95% of whom were non-European American, and concluded that culturally adapted interventions showed significantly better outcomes compared to no intervention or other interventions (Hall et al., 2016). Furthermore, utilizing intervention and training adaptations for national and local needs are core recommendations from the Mental Health Gap Action Programme Intervention Guide (mhGAP-IG) Version 2.0 by WHO (Wainberg et al., 2017). A recent study found that when treatment training was adapted to local primary health care contexts, the process of creating adaptations (i.e., identifying mental health needs, developing a preliminary training program and schedule) helped to uncover systemic barriers, which provided helpful information to deliver more effective treatments (Spagnolo et al., 2018). Therefore, when considering rapid globalization and its broader cultural contexts, adapting current conventional interventions to relevant populations in the world (Guo & Hanley, 2015), as well as examining the effectiveness of treatments with target populations, is essential.

Focus on Western Countries

Despite the importance of cultural diversity, research in psychology has overly focused on testing treatments with English-speaking populations in the U.S. and Western countries. Research in psychology has been criticized for using samples that are mostly Western, Educated, Industrialized, Rich, and Democratic (WEIRD; Henrich et al., 2010). According to a journal content analysis with six major APA journals: *Developmental Psychology*, *Journal of Personality and Social Psychology*, *Journal of Abnormal Psychology*, *Journal of Family Psychology*, *Health Psychology*, and *Journal of*

Educational Psychology for 2003-2007, 95% of the samples were from the U.S. and English-speaking countries, and Europe; only two percent of all first authors were from non-English speaking countries (Arnett, 2008). Moreover, the top four citation sources of research in psychology were all from English-speaking countries such as the United States, the United Kingdom, Canada, and Australia, and 70% of all citations came from the U.S. (Henrich et al., 2010; May, 1997). In addition, researchers point out potential negative consequences resulting from the widespread use of the Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association and the quick spreading of Evidence-Based Practice (EBP) that are deeply ingrained in U.S. context when transported outside the U.S. (Aarons et al., 2017; Domenech Rodríguez et al., 2018). This highlights the flaws in the assumption in psychology that research findings are broadly representative; there is a lack of evidence supporting that the findings of western psychology research can be generalized to diverse populations.

Language Barriers in Psychology Research

Language barriers seem to be a significant contributor to the over-emphasis of psychology research conducted by and in Western countries. Considering the importance of psychological research and treatment being adapted to a globalized world, conducting research that considers global variations in human behaviors, societal norms, and cultural values (APA, 2017), an increase in cross-national and cross-language studies is warranted (Tsai et al., 2004; Wagner et al., 2014). Although research funding sources in Europe (i.e., European Commission's Framework) have started to recommend cross-national comparative studies and international collaboration (Salway et al., 2011), the reality is that most research continues to occur within and between western countries, and not

between western and eastern countries. In other words, despite efforts to promote diversity in psychology research, language barriers continue to interfere with conducting research in non-English languages and/or sharing empirical research findings between publications in different languages.

For instance, when researchers in the U.S. and English-speaking western countries recruit participants for Randomized Control Trials (RCTs), they often list “fluent English speaker” as one of the eligibility criteria. A recent study randomly selected over 10,000 clinical trial protocols from “ClinicalTrials.gov” and examined the inclusion and exclusion criteria (Egleston et al., 2015). English fluency requirements have been significantly increasing over time, from 1.7% before 2000 to 9.0% after 2010. Interestingly, 28.4% of behavioral intervention trials (e.g., psychotherapy or lifestyle counseling; Zarin & Tse, 2013) required English fluency, which was a significantly higher percentage of RCTs than in other areas of psychology (Egleston et al., 2015). This criterion of English fluency can result in missing out on opportunities to understand human behavior in a broader, multicultural context.

Meta-analytic and systematic reviews seem to document similar language barriers. Reviews often require “English language publication” as one of the primary inclusion criteria. When researchers choose to exclude non-English studies, it can bring systematic errors or biases into the meta-analytic results, threatening the validity of the analyses (Moher et al., 2000; Moher et al., 2003). For example, a recent systematic review of RCTs on Cognitive Behavioral Therapy (CBT) in South Korea found a total of 50 RCTs published in Korean-language journals (Bahk et al., 2018). However, these RCTs have rarely been discussed or integrated into the broader CBT literature. As a

result, this contributes to biases in clinical research reviews that are overly focused on western countries.

Cross-Cultural Treatment Research

Cultural differences in the presentation of psychological symptoms between eastern and Western countries are well documented. For example, previous studies indicate that non-Western people with depression tend to report more somatic symptoms than Western people with depression (Simon et al., 1999). In line with this, depressed Korean patients manifest more somatic symptoms than Western patients (Zhou et al., 2015). This tendency has been attributed to the disease concept in traditional Eastern medicine, which projects emotional ailments onto the soma and the traditional suppression of verbal expression of emotion within a large family system (Kim, 1999; Kim et al., 1999). In terms of social phobia, several studies have documented that Asian people tend to report higher social anxiety in research settings than those with European heritage (Okazaki, 1997, 2000; Norasakkunkit & Kalick, 2002). A cross-national study found that participants in collectivistic East Asia (South Korea and Japan) displayed higher levels of social anxiety than those in individualistic countries (Australia, Canada, Germany, Netherlands, and the U.S.; Schreier et al., 2010). Furthermore, a recent meta-analysis on social anxiety that compared Asian and Western European samples revealed that Asians who live in Asian countries exhibit higher social anxiety scores ($d = 0.52$) than Asian-heritage people who live in Western countries ($d = 0.39$; Woody et al., 2015).

Culture-specific syndromes of social anxiety and depression have been officially added in the Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV and DSM-5. For example, *Hwa-Byung* is a culture-specific syndrome that can be found among

middle-class and middle-aged Korean women in Korea (Lee et al., 2014), which consists of various physical, emotional, behavioral, and social symptoms, such as chest pain, respiratory discomfort, insomnia, fear that “nerves will go bad,” and feelings of hopelessness or helplessness (Lee et al., 2014). *Taijin kyofusho* (TKS) is another culture-specific syndrome, which involves fears of offending others and displaying physical defects and/or socially inappropriate behaviors (Hofmann et al., 2010). This may indicate that culture shapes the manifestation of psychological disorders. Therefore, researchers need to understand whether certain psychological phenomena can be considered normative within a given cultural context (Conway et al., 2017).

The question of whether psychological treatments that have been developed in Western culture are directly and globally applicable is still largely unanswered. In other words, although there is plenty of research that compares cultural differences in psychological symptom presentations between Eastern and Western countries, there is not enough treatment research that informs how to adapt Western therapy models to Eastern cultures, and whether such treatments are efficacious in Eastern cultures. The insufficient evidence-base in this area is a primary problem for developing treatment guidelines appropriate for Asia because most current guidelines have come from Western research data or guidelines based on treatment utilized in Western countries (Treuer et al., 2013). Therefore, in order to maximize the efficacy of treatment in non-Western cultures, it is crucial to conduct treatment research directly with target populations.

Even among Asian countries, it is important to diversify research samples and conduct research with relevant cultural subgroups. Researchers often label “Asian” as a homogenous group in research; however, this is an unsophisticated point of view when

considering that Asia is the most populous continent, consisting of more than 4.4 billion people (United Nations, 2015) in 48 countries, and with more than 2,300 languages. The label “Asian” is considered an ethnic gloss, a construct that points to overgeneralizing or applying a simplistic, categorical label to refer to a certain ethnocultural group, including Asian Americans, which can create biased research findings (Trimble & Bhadra, 2013). Therefore, labeling Asians as one group ignores the great variability amongst Asian peoples with regard to culture, religion, socioeconomic status, and language. In order to promote worldwide EBPP, treatment research should be conducted with specific Asian cultural subgroups, and evidence of treatment efficacy should be established with relevant target groups. The current meta-analysis and systematic review focus on treatment research in South Korea, specifically.

The Current State of Field of Psychology in South Korea

In South Korea, although Western psychotherapy was initially introduced in the early 1930s (Rhi, 1972, 1985), it began to be clinically used after the 1950s following the Korean War (Bae et al., 2003). After the Korean War, many psychiatrists went to western countries, such as the United States and Germany in order to pursue further education and returned to Korea with Western psychotherapies, particularly the psychoanalytic approach (Bae et al., 2003, Joo, 1996; Kim & Kim, 2017). Other fields in clinical psychology, counseling psychology, and social work started practicing in South Korea during the 1970s and 1980s (Bae et al., 2003).

The Korean Psychological Association (KPA) was founded in 1946, which now has almost 20,000 people as members. The KPA consists of 15 divisions, including Division 1. Korean Clinical Psychology Association, Division 2. Korean Counseling

Psychological Association, Division 3. Korean Society for Industrial and Organizational Psychology, Division 4. Korean Social and Personality Psychological Association, Division 5. Korean Society for Developmental Psychology, Division 6. Korean Society for Cognitive and Biological Psychology, Division 7. Korean Association of Culture and Social Issues, Division 8. Korean Health Psychological Association, Division 9. Korean Society for Woman Psychology, Division 10. Korean Society for Consumer Advertising Psychology, Division 11. Korean School Psychology Association, Division 12. Korean Association of Psychology and Law, Division 13. Korean Society of Addiction Psychology, Division 14. Korean Society of Coaching Psychology, and Division 15. Korean Society of Psychological Measurement and Assessment. Each division possesses its journal, and some of them (including clinical psychology, counseling psychology, developmental psychology, industrial and organizational, forensic psychology, addiction psychology, health psychology, and coaching psychology) issue professional licenses.

Licensure

There are broadly two types of licensure in clinical psychology: government-issued certificates and the Korean Clinical Psychology Association (KCPA)-issued certificates. The government-issued certificates come from the Ministry of Health and Welfare and consist of two levels: Level 1 (master's level psychologist with two years of clinical training or Level 2 psychologist with five years of clinical experience) and Level 2 (bachelors' level with one-year training). However, these certificates have been often criticized for insufficient training and loose qualification (Kim et al., 2017). The licensure from the KCPA, which is under KPA, is regarded as private licensure. The minimum requirement of the KCPA's clinical psychologist certificate is master-level training with

three years of clinical training under a supervisor who holds KCPA accreditation (Kim et al., 2017). As of 2018, 1500 professionals have acquired a clinical psychologist certificate under the KCPA, and 2500 professionals hold the Mental Health Clinical Psychologist Certificates (Level 1 and 2) authorized by the Ministry of Health Welfare based on the Mental Health Act in South Korea. While there is no governmental licensure for counseling psychologists, counseling psychology-related organizations (i.e., Korean Counseling and Psychological Association, Korean Counseling Association, Korean Association of Family Therapy, Korean Association of Christian Counseling and Psychotherapy) issue certificates based on their eligibility (Ju, Han, Lee, & Lee, 2016).

Education

In South Korea, 40 universities offer a psychology major, and 16 universities are located in Seoul, which is the capital of South Korea (Kim et al. 2017). More than 100 graduate students are in master's programs from those 40 universities; however, significantly smaller numbers of clinical doctoral students are produced in South Korea because a doctoral degree is not a requirement to become a licensed clinical psychologist in South Korea (Kim et al., 2017). For example, among 525 registered clinical trainees in the academic year of 2014-2015, only 14 trainees held a doctoral degree (KCPA Vision 50 planning Committee, 2016), which indicates the majority of trainees came from master's level programs (Kim et al., 2017).

Despite the improvement in the field of psychology and the increased need for mental health services in South Korea over several decades, the shortage of mental health professionals has been documented as a challenge. For example, according to the report by WHO in 2017, South Korea reported 40.1 mental health professionals per 100,000

people while Canada, United States, and Germany reported 285.9, 271.3, and 144.9 per 100,000 people, respectively (WHO, 2017). Furthermore, when counting only psychologists, South Korea reported 1.6 per 100,000 people while Canada, the United States, and Germany reported 48.7, 29.9, and 49.6, respectively (WHO, 2017). These numbers indicate the obvious shortage of mental health professionals in South Korea compared to other developed countries.

Mental Health in South Korea

South Korea has several unique cultural and contextual factors that may be different from other countries in Asia. These unique cultural contexts may impact the efficacy and implementation of Western treatment, and cultural adaptations are likely required to make implementation successful. Researchers have documented relevant contextual factors in South Korea, including the rates of various mental disorders (Cho et al., 2015), high rates of suicide (OECD, 2020), stigma toward mental illness (Park et al., 2015), underutilization of mental health services (Cho et al., 2009), and low mental health literacy (Jeon & Furnham, 2017).

Mental Disorders

A recent epidemiologic study with 6,022 Korean adults revealed the following lifetime prevalence estimates of mental disorders: alcohol use disorders, 13.4%; nicotine use disorders, 7.2%; anxiety disorders, 8.7%; and mood disorders, 7.5% (Cho et al., 2015). The 12-month prevalence estimates of disorders were as follows: alcohol use disorders, 4.4%; nicotine use disorders, 4.0%; anxiety disorders, 6.8%; and mood disorders, 3.6% (Cho et al., 2015). Results of the study indicated that the prevalence rates of all types of DSM-IV mental disorders were 27.6% for lifetime prevalence and 16.0%

for 12-month prevalence, which are higher rates than those of other developed countries (Cho et al., 2015). Higher prevalence rates in South Korean samples indicate the importance of treatment efficacy trials using Korean samples.

Suicide

According to the recent data from the Organization for Economic Co-operation and Development (OECD), South Korea ranked first in suicide rates among OECD countries in 2018. According to a national survey in 2007, 24.8 people of every 100,000 committed suicide (Korea National Statistical Office, 2008); this rate was higher than the U.S. (10.1), the United Kingdom (6.0), and Japan (19.1; Jeon et al., 2010; OECD, 2008). The 15.2% prevalence of suicidal ideation in South Korea was also higher than other countries, including other Asian countries and Western countries with a range from 3.0% to 13.5% (Jeon et al., 2010; Lee et al., 2007; Nock et al., 2008; Ono et al., 2008; Scocco et al., 2008; Weissman et al., 1997). This indicates that suicidal behaviors are a significant mental health problem in South Korea.

Stigma

Both qualitative and quantitative studies have documented stigma toward psychological disorders in South Korea. According to a qualitative study, people with serious mental illness in South Korea experience greater social isolation due to stigma than those without serious mental illness (Hyun et al., 2012). Quantitative studies have indicated that a higher level of stigma was associated with more severe symptoms of depression as well as a longer history of mental illness (Kim & Kahng, 2012). According to a national survey, South Korean people often see mental health issues as self-limiting disorders that should be resolved by themselves (Cho et al., 2009). Moreover, many

researchers have documented the link between underutilization and stigma. People who hold stigmatizing attitudes toward people with psychological disorders tend to have less favorable attitudes toward seeking professional psychological help themselves (Leong & Zachar, 1999; Vogel et al., 2007). This may imply that in order to maximize the effectiveness of treatments, the cultural context in which South Koreans view, seek, and respond to treatment for mental health problems should be considered.

There are several potential explanations for why South Koreans are likely to show stigmatizing attitudes toward psychological disorders and mental health services. First, South Korea is a collectivistic culture that emphasizes group or social harmony, unlike individualistic culture, which emphasizes an individual's achievement and success. This explanation is supported by a survey study that used 305 respondents from various cultural groups, which found greater stigma toward psychological disorders among respondents who were from collectivistic societies (Papadopoulos et al., 2013). The link between collectivistic values and greater stigma is not surprising because collectivist societies highly value conformity to norms, and any deviation from societal norms would be seen as a personal weakness that causes public stigma (Abdullah & Brown, 2011).

Second, one of the most distinctive value systems that are highly relevant to cultures in South Korea is Confucianism. Confucian values are highly intertwined with collectivism and in-group harmony (Han et al., 2017). For example, *Chemyen*, meaning "saving face," refers to the desire to save face in public, and is associated with the importance of saving one's reputation, dignity, and social standing in the community (Kim, 1990; Min, 2006; Han et al., 2017). Seeking mental-health treatment might be seen

as an embarrassment and a sign of inferiority, which would threaten an individual's social status in the community (Han et al., 2017).

It is important to note, however, cultural changes across generations in South Korea, especially amongst young people. Due to rapid globalization, urbanization, and increased exposure to Western culture and Western mass media, there is a tension between holding collectivistic group obligations and developing individualist values (Bae et al., 2003). This trend has been shown in survey reports. For example, people who have a younger age, a college education, live in an urban city, or work for a large company tend to endorse more individualistic cultural values (Cho et al., 2010) than those without these characteristics. It is important to understand the unique, nuanced factors that contribute to stigma toward mental illness in South Korea so that treatments can be adapted for South Korea in the most optimal ways.

Underutilization

Research shows that mental health services are underutilized among South Koreans. A survey of 6,257 South Koreans found that only 1.9% of participants reported the use of mental health services during the past 12 months (Cho et al., 2009). The same data showed that 916 people met the criteria for a diagnosis of a psychiatric disorder, and only 6.1% of those people had received mental health care (Cho et al., 2009). This utilization rate is low compared to other countries, such as 32.9% of Americans (Kessler et al., 2003), 34.1% of Latino/a and Asian Americans (Abe-Kim et al., 2007), and 35% of Australians (Andrews et al., 2001).

Several factors associated with mental health service utilization were revealed among Korean populations. A recent national survey with 2,120 respondents indicated

that individuals aged 70 or above were less likely to receive mental health services than younger individuals aged 19 and 29 years old (Jang et al., 2018). Women showed higher mental health utilization rates than men, and individuals who were divorced exhibited higher rates of mental health services utilization than those who were married (Jang et al., 2018). In a survey study to learn more about why South Korean people are reluctant to seek mental health services (Cho et al., 2009), the most common reasons people chose not to seek mental health services were: a wish to handle the problem on their own (23.4%), the belief that they did not have a psychiatric disorder (23%), and the belief their mental illness would resolve by itself (18.7%; Cho et al., 2009). This indicates that South Koreans underutilize mental health services compared to other countries (i.e., Americans, Australians) and that contributing factors for the underutilization include gender, age, educational level, and marital status.

Mental Health Literacy

Low mental health literacy has been reported in South Korean populations (Jeon & Furnham, 2017). Mental health literacy can be defined as “knowledge and beliefs about mental disorders which aid their recognition, management or prevention” (Jorm et al., 1997, p. 184). In order to examine mental health literacy in South Korea compared to other countries, researchers conducted experiments with 253 South Korean participants using vignettes that included anorexia, bulimia nervosa, obsessive-compulsive disorder (OCD), substance addiction, schizophrenia, social phobia, bipolar disorder, depression, and attention deficit hyperactivity disorder (ADHD). The study found that South Korean people are poorer at recognizing mental health disorders than British people and that recognition rates of psychological disorders differed within Asian countries as well,

specifically between South Korea, Malaysia, Hong Kong, and China. This indicates that mental health literacy can be notably different among countries that share a similar culture (Jeon & Furnham, 2017). This also may indicate lower overall problem identification and readiness among South Koreans to engage in mental health services compared to Western countries and even other Asian countries.

In summary, mental health in South Korea faces unique contextual factors, such as a high prevalence rate of mental disorders, high suicide rate, high stigma toward mental health services, low utilization of mental health services, and low mental health literacy. This highlights that treatment ought to be tailored based on the cultural context in order to meet the various mental health needs in South Korea. However, it is still unclear whether these contextual factors were taken into consideration as a cultural adaptation of western therapies.

Acceptance and Commitment Therapy

One treatment that has been implemented internationally is Acceptance and Commitment Therapy (ACT; Hooper & Larsson, 2015). ACT is an evidence-based therapy that targets experiential avoidance and promotes psychological flexibility (Hayes et al., 2011). Psychological flexibility consists of six core processes: acceptance, cognitive defusion, contact with the present moment, self-as-context, values, and committed action. *Acceptance* refers to willingness to experience inner experiences, such as painful thoughts, feelings, and sensations without making attempts to control or change them. *Cognitive defusion* refers to acknowledging inner experiences as merely inner experiences without viewing them literally. *Contact with the present moment* refers to noticing inner experiences without ruminating about the past or worrying about the

future. *Self-as-context* refers to an ability to distinguish one's inner experiences from one's self. *Values* are a chosen direction that motivates behavior toward essential areas of one's life. *Committed action* is an actual behavioral commitment that is congruent with one's chosen values.

The Efficacy of ACT

ACT is efficacious for a wide range of behavioral health issues. For example, the efficacy of ACT has been examined for various psychological problems, such as anxiety, depression, eating disorders, substance abuse, self-harm, academic concerns, social concerns, stress and burnout, stigma and prejudice related issues, and psychosis (Bluett et al., 2014; Hayes et al., 2006; Ruiz, 2010) with well over 300 RCTs (Association for Contextual Behavioral Science [ACBS], 2020). A recent meta-analysis concluded that ACT might be equally effective to Cognitive Behavioral Therapy in treating mental and physical health problems, including anxiety, depression, addiction, and somatic health issues (A-Tjak et al., 2015). In addition, ACT has been listed as an evidence-based practice by several institutes in the U.S., including the Substance Abuse and Mental Health Services Administration (SAMHSA), which lists ACT as an efficacious treatment for OCD, depression, rehospitalization, and general mental health, as well as the American Psychological Association's Division 12 list of empirically supported treatments for OCD, chronic pain, depression, mixed anxiety disorders, and psychosis, with a range from modest to strong evidence (ACBS, 2017).

ACT as an International Treatment

Although ACT was initially used mainly in the U.S. and similar Western countries, ACT has been implemented globally, including countries in Asia and Africa.

ACBS, a well-known international community for ACT researchers and practitioners, reported that as of December 2017, approximately 7,800 people were enrolled as members of the organization, and half of those members were from countries outside of the U.S. (ACBS, 2017). The ACBS website lists ACT publications in many non-English languages. For example, when searching publications by “language” on the ACBS website, 176 non-English research papers have been published in more than 13 languages. However, only a handful of studies were conducted in non-Western countries, published in English, and cited in the English literature review (e.g., Kishita & Shimada, 2011; Lundgren et al., 2006; Lundgren et al., 2008; Hoseini et al., 2014; Hosseinaei et al., 2013; Mohabbat-Bahar et al., 2015; Mo’tamedi et al., 2012; Muto et al., 2011; Stewart et al., 2016; Takahashi et al., 2002; Tol et al., 2018).

Despite efforts from ACBS as an international ACT community, most of the evidence for the efficacy of ACT is still reviewed and discussed in English speaking countries, and most ACT meta-analyses include English language publication as one of the inclusion criteria (e.g., Bluett et al., 2014; Öst, 2008, 2014; Powers et al., 2009). Moreover, because of language barriers, there is little information about the efficacy and effectiveness of ACT in countries where English is not the national language. It is still unclear whether the outcomes from the handful of studies that have examined ACT in non-Western countries are generalizable to other countries that have not been included in research samples. Therefore, in order to communicate research findings from non-English speaking countries, cross-national reviews are needed that describe treatment implementation, efficacy, and/or adaptation in other countries.

ACT in South Korea

One large body of ACT research that has not been reviewed and introduced to English speaking audiences are the studies that have been conducted in South Korea. A substantial amount of research on ACT has been published in South Korea without recognition from Western countries. The first ACT conceptual paper was published in 2005, entitled *The Third Wave of Cognitive-Behavioral Therapy* (Moon, 2005), and the first RCT of ACT in South Korea was published in 2011, entitled *The effects of Acceptance and Commitment Therapy on Anger, Stress, and Binge Eating Behaviour of the Binge Eating Disorder-Prone College Students* (Song & Son, 2011). As of December 2017, a total of 72 ACT studies have been published in South Korea that consist of 28 RCTs, 23 Non-RCTs, and 21 non-experimental studies or conceptual papers; English speaking audiences are not aware of and cannot access information on these studies due to being published in Korean journals. Furthermore, two meta-analyses were published in Korean journals. The first meta-analysis examined the effectiveness of ACT interventions in general and found a moderate effect size ($g = .70$) across 43 studies (Kim, 2016). The second meta-analysis examined the effectiveness of ACT for depression and anxiety and found a large effect ($g = .88$) for depression across 16 studies and moderate effect ($g = .79$) for anxiety across 17 studies (Lee et al., 2018). However, western research communities are rarely aware of these findings due to language barriers.

The proliferation of ACT studies in South Korea may be due to congruence with Korean traditions, suggesting that ACT may provide a good cultural fit. Korean psychologists have criticized the adoption of Western psychological models for Korean populations without sufficient examination (i.g., Chang, 1999, 2003). A major criticism among South Korean researchers is the lack of attention to different worldviews between

South Korea and Western countries. South Koreans view the world in holistic ways. South Korean people understand background events, see events as moving in cycles between extremes, and view the world as complex and highly changeable. They also believe in the necessity of coordination with others in order to control events. This holistic view among Korean people is aligned well with the core concept of ACT as a treatment approach because ACT emphasizes a holistic understanding of human experiences (Hall et al., 2011; Hayes et al., 2011). Furthermore, similarities and differences between ACT and Buddhism have been documented. One of the distinctive differences is that while the main purpose of ACT is to promote therapeutic changes that enhance meaningful life as a therapeutic approach, Buddhism is a religious practice that promotes spirituality (Fung, 2015). In terms of similarities, although ACT has been developed as a therapeutic approach in the U.S., the core understanding of how to define and address human suffering is comparable to concepts from Buddhism (Hayes, 2002). This includes how ACT posits the role of language as an important component of human suffering (Hayes et al., 2011) that is similar to the Four Noble Truth from Buddhism, which consists of the truth of suffering, the truth of the cause of suffering, the truth of the end of suffering, and the truth of the eight paths that lead to the end of suffering (Fung, 2015). Therefore, when considering the traditional contexts of South Korea, that is, Buddhism, with the large influences from Confucianism, ACT is likely to work well with South Korean populations.

Consequently, reviewing ACT studies in South Korea would provide three important perspectives. First, by conducting a meta-analysis, aggregated scientific evidence of ACT in Korea can be summarized. Second, exploring ACT studies published

in South Korea would clarify what kind of research has been done to date. This will inform future research directions of ACT research in South Korea. Third, by comparing treatment protocols and manuals in South Korea and the U.S., valuable opportunities for initiating a discussion on how to successfully adapt ACT treatments for non-Western cultures would be established.

One of the core cultural adaptations is to adapt content and metaphors for the target population (Bernal et al., 1995). Considering that ACT often uses metaphors during a course of therapy (Hayes et al., 2011), a South Korean meta-analysis may provide valuable insights about how to adapt contents and metaphors for non-English speaking populations. This can be done by comparing ACT treatment protocols and manuals between South Korea and the U.S. Therefore, a review of ACT research in South Korea can provide critical knowledge related to cultural adaptation that can benefit both research on ACT and clinical use of ACT.

Present Study

In order to examine the effectiveness of ACT interventions with South Koreans, enhance cross-cultural communication of findings in treatment studies across the world, and explore cultural adaptations of treatment from a Western psychology model, a meta-analysis and a systemic literature review were conducted. Research in psychology tends to focus on Western culture and Western populations; thus, the question of how to provide effective treatments for non-Western populations has been highlighted as an important topic. However, language barriers and sample recruitment-related issues often impede researchers in conducting and examining research in non-English speaking cultures. One way to deal with these barriers is to use systematic and meta-analytic

reviews. Fortunately, due to increased research interests in ACT in South Korea, reviewing ACT studies in South Korea may be a promising avenue to provide important information about how to adapt a Western psychology model to other cultural populations. Therefore, the current study seeks to review ACT studies in South Korea not only to communicate research findings across the world but also to inform how to best adapt ACT for other cultures in general.

Specific Aims

The current study employed a systematic review and meta-analysis to examine the efficacy of ACT in South Korea and to explore similarities and differences in implementing ACT in a non-Western country. In detail, the research aims are:

Study 1 Aim. To systematically review ACT RCTs, quasi-experimental, open trial designs, or laboratory studies in South Korea.

Research Question 1: What populations, primary problems, comparison conditions, types of studies, and intervention formats have been used in Korean ACT studies?

Study 2 Aim. To examine the efficacy of ACT in South Korea based on published RCTs to-date.

Research Question 2: Is ACT an effective treatment for South Koreans?

Study 3 Aim. To review Korean treatment protocols and cultural adaptations.

Research Question 3: What ACT treatment strategies have been used, and what types of cultural adaptations have been made in Korean ACT protocols?

CHAPTER III

METHODS

Study 1: Systematic Review

Literature Search

A comprehensive literature search was conducted on ACT in South Korea. In order to obtain published ACT studies in South Korea, two electronic databases, including Research Information Sharing Service (RISS) and Korean studies Information Services System (KISS) were searched to find studies. The following search terms were used in the databases: “수용전념치료,” “수용,” “전념,” “수용전념,” “Acceptance and commitment therapy,” “Acceptance,” “Acceptance-based,” and “ACT.” After removing duplicates, full-length articles were obtained and reviewed in detail. Additionally, four peer-reviewed journals were searched, such as *The Korean Journal of Clinical Psychology*, *The Korean Journal of Health Psychology*, *The Korean Journal of Counseling and Psychotherapy*, and *The Korean Journal of Counseling*.

Inclusion Criteria

Criteria for inclusion into the current systematic review were as follows studies: (a) recruited South Korean participants, (b) published between 2005, when the first ACT paper was published in South Korea, and up to December 2018 in a peer-reviewed journal in South Korea, (c) were written in Korean or English, (d) used an experimental methodology (i.e., RCTs, quasi-experimental or laboratory) that has at least one control group, (e) examined ACT interventions, including ACT-based acceptance, cognitive defusion, values, or mindfulness interventions, (f) contained pre-and post-treatment

scores and/or follow-up assessment scores, which allowed researchers to measure intervention effectiveness, and (g) reported quantitative data (e.g., means, standard deviations, results of statistical tests, p values) at each assessment time point. If quantitative data was not reported, authors were contacted to obtain the data.

Studies were excluded in this systematic review if (a) quantitative data was not available after contacting original authors, (b) they were written in languages other than Korean or English, (c) they were conference papers, abstract-only materials, or book chapters, or (d) they were conceptual papers. All steps for searching and screening articles are documented in Figure 1.

Data Collection

After obtaining relevant studies, data was extracted into two sections: study characteristics and systematic review. In the study characteristics section, the following information was documented: authors (year), problem area, conditions, recruitment, sample size, percentage of women, mean age, outcome measures, assessment points, therapy format, therapy duration, therapist training, and attrition number. The data is summarized in Table 1. In the systematic review section, the following information was compiled in an excel file and then summarized in a table: authors (year), aims of the study, population, conditions, number of participants for each condition, attrition rate, duration of intervention, intervention time and duration, and outcome measures. The definition of a quasi-experimental study in this review is an experimental study without randomization. When an article did not clearly indicate whether randomization was conducted, the primary author was contacted to confirm the quasi-experimental design. See Table 1.

Study 2: Meta-Analysis of RCTs

Literature Search

Same as Study 1.

Inclusion / Exclusion Criteria

Criteria for inclusion into the current meta-analysis were as follows: (a) studies that enrolled only South Korean participants, (b) studies were published from 2005 when the first ACT paper was published in South Korea, and up to December 2018 in a peer-reviewed journal in South Korea, (c) studies were written in Korean or English. Studies published in English were included if they were published in Korean Journals, (d) studies used an RCT design (subjects were assigned randomly to treatment and control conditions), (e) a treatment condition received ACT or ACT-based interventions that cover six core ACT processes, such as acceptance, cognitive defusion, contacting the present moment, self-as-context, values, and committed action, and consist of more than one sessions, (f) studies contained pre- and post-treatment scores and/or follow-up assessment scores, which allowed researchers to measure intervention effectiveness, (g) studies reported quantitative data (e.g., means, standard deviations, results of statistical tests, *p* values) at each assessment time point. If quantitative data was not reported, authors were contacted to obtain the data.

Studies were excluded in this meta-analysis if (a) quantitative data was not available after contacting original authors, (b) they were written in languages other than Korean and English, (c) they were conference papers, abstract-only materials, or book chapters, (d) they were conceptual papers or non-RCT studies. (e) interventions that did

not cover all the core ACT processes were excluded. All steps are documented in Figure 1.

Data Collection

After obtaining relevant studies, the abstract, methods, results, and conclusion sections were reviewed. The following data from each of the studies were compiled in an excel file and then summarized in a table: basic study information (year of publication, authors), methodological variables (Jadad scores, conditions, recruitment, sample size, measures, assessment points), subject characteristics (sex, age), treatment characteristics (therapy format, treatment duration and intensity, therapist training), outcome variables, and attrition number. See Table 2.

Primary outcomes were defined as: a) targeted primary outcomes reported in the manuscripts or b) outcomes that were closest to the targeted psychosocial problem area as determined by the coders. When functioning/behavioral and symptoms measures were both used, functioning/behavioral outcomes were given priority as a primary outcome to be consistent with the primary goals of ACT. Process outcomes were defined as outcomes that measured psychological inflexibility. Secondary outcomes were defined as other outcomes that did not belong to either primary or process outcomes. In order to calculate effect sizes, means (*M*) and standard deviations (*SD*) or percentages for rate/dichotomous outcomes were extracted and compiled. However, if those values were not obtainable, *F* values or similar statistical data reported in the manuscript was alternatively used to calculate effect sizes.

Data collection was done by the author, who speaks Korean and English. In order to ensure the accuracy of coding, a coding manual was established (see Appendix C).

Another Korean graduate student in a master's program in the U.S. independently coded data based on the manual. After the two coders completed their coding, the outcomes were compared and corrected for any disagreement.

Quality Assessment

All RCTs were assessed for methodological quality by using the *Jadad Scoring of Quality of Reports of Randomized Clinical Trials (JSQRRRC) scale* (Jadad, 1996). The scale is widely used to assess the methodological quality of RCTs. It is composed of 11 items (a) Was the study designed as randomized? (b) Was the study designed as double-blind? (c) Was there a description of withdrawals and dropouts? (d) Were the objectives of the study defined? (e) Were the outcome measures defined clearly? (f) Was there a clear description of the inclusion and exclusion criteria? (g) Was the sample size justified? (h) Was there a clear description of the interventions? (i) Was there at least one control group? (j) Was the method used to assess adverse effects described? (k) Were the methods of statistical analysis described? The maximum possible score was 13 (two items have two possible points). Articles accruing more than nine points, or more were identified as “good.” Two coders independently evaluated each RCT. The interrater agreement (interclass correlation coefficient and 95% confidence interval) was calculated. Any disagreement was resolved after evaluation.

Statistical Analysis

Data were analyzed using Comprehensive Meta-Analysis (CMA), software designed for conducting meta-analyses (Borenstein et al., 2005). Effect sizes were calculated using Hedges' g and a 95% confidence interval. Cohen's (1988) conventional interpretation of effect sizes were used to interpret Hedges' g effect size (i.e., small = 0.2,

medium = 0.5, large = 0.8). Because the included studies were heterogeneous and not functionally identical, effect size estimates were calculated using a random-effects model rather than a fixed-effects model (Hedges & Vevea, 1998). In order to further investigate the effectiveness, sub-group analyses were separately performed by problem areas and sample types while differentiating different time points and outcomes.

Due to the nature of meta-analyses that include clinically and methodologically diverse studies (Higgins et al., 2003), I^2 index was used to detect the degree of heterogeneity. I^2 is one of the major indices that measure heterogeneity in a meta-analysis (Higgins et al., 2003; Huedo-Medina et al., 2006) and can quantify inconsistency using the percentage of total variance across studies (Higgins et al., 2003). Although there is no absolute rule of thumb for the interpretation of I^2 values, it is widely known that values of 25%, 50%, and 75% indicate low, moderate, and high heterogeneity, respectively (Higgins et al., 2003).

Study 3: Narrative Review of Korean ACT Protocols

Literature Search

Same as Study 1.

Materials

Most Korean treatment studies tend to include information about treatment protocols. All obtainable treatment protocols from Korean ACT RCT studies were used.

Data Collection

Content from each treatment protocol was coded, including problem area, ACT components, and the description of each session. In addition, in order to explore cultural adaptations from Korean ACT protocols, the eight dimensions of cultural adaptation

specified in Bernal et al. (1996) ecological validity framework were coded, specifically: language, people, metaphors, content, concepts, goals, methods, and context. All information was coded by the main author, who speaks Korean and English. There was no double coding in this section.

CHAPTER IV

RESULTS

Study Selection

Research Information Sharing Services produced 594 articles, and the Korean Studies Information Services System produced 709 articles. After carefully removing duplicates and filtering articles based on inclusion and exclusion criteria, 62 eligible studies were identified. The process of study selection is illustrated in detail in Figure 1.

Study 1: Systematic Review

The systematic literature search identified 31 randomized controlled trials (RCTs), 28 quasi-experimental studies, and three laboratory studies of ACT in South Korea.

Quasi-Experimental Studies

Study Characteristics

All 28 quasi-experimental studies used a group format and compared an ACT group against a waitlist. The smallest study consisted of five participants for each condition, and the largest study had 46 participants assigned to ACT and 32 to WL. While 16 studies used clinical or sub-clinical samples, 12 studies used non-clinical samples. Of the 28 studies, 18 studies required specific cutoff scores or physical or psychological conditions. Eight studies used 100% of female participants. Eleven studies recruited general community samples, three studies recruited middle school/high school students, two studies recruited inpatients (e.g., a psychiatric sample or a hospitalized sample due to alcohol problems), two studies recruited elementary students, one study

recruited people in the military, and nine studies recruited participants in a university setting. Table 1 reports on all studies and their study characteristics.

Anxiety

Seven quasi-experimental studies focused on anxiety and anxiety-related issues. In the study conducted by Lee and Ahn (2012), 54 participants ($M_{age} = 29$, $SD = 6.7$) were non-randomly assigned to either the ACT group or wait-list control group to examine the effectiveness of ACT for anxiety. The ACT group showed larger decreases in anxiety (State anxiety: $g = 1.09$ at post and $g = 4.98$ at follow-up; Trait Anxiety: $g = 1.23$ at post and $g = 1.73$ at follow-up), depression ($g = .79$ at post and $g = .74$ at follow-up), anxiety sensitivity ($g = .71$ at post), and anxiety controllability ($g = .97$ at post and $g = 1.99$ at follow-up) relative to the waitlist group. Process variables (i.e., mindfulness, thought suppression, acceptance, self-compassion) in ACT for anxiety improved after treatment, with small to large effect sizes.

Kim and Baik (2013) examined the effects of ACT for speech anxiety in college students. They non-randomly assigned 38 participants to an ACT group intervention or no-treatment control group. Although there were no significant differences in the frequency of speech anxiety thoughts and the confidence of speech anxiety thoughts between ACT and control groups, speech anxiety ($g = 1.03$) and speech avoidance behavior were more decreased ($g = .96$) and self-efficacy on speech was increased ($g = .93$) for the ACT group relative to the control group.

Kim (2013) examined the effects of ACT on anxiety for middle school and high school students. The study non-randomly assigned 54 participants, whose ages ranged from 14 to 16, to an ACT group intervention or waitlist condition. Participants in the

ACT group reported larger decreases in anxiety (state anxiety: $g = 4.90$ at post and $g = 1.09$ at follow-up; trait anxiety $g = 1.23$ at post and $g = 1.73$ at follow-up), depression ($g = .79$ at post and $g = .74$ at follow-up), anxiety sensitivity ($g = .71$ at post) and anxiety controllability ($g = .97$ at post and $g = 1.99$ at follow-up) compared to participants in the waitlist group.

Kwon and Chung (2014) examined the effects of ACT on the psychological adjustment of university students with a high level of social anxiety in a sample of 78 participants. Compared to the waitlist group, ACT was effective in decreasing students' social anxiety ($g = .67$ at mid, $g = 4.67$ at post, $g = 4.58$ at four-month-follow-up, and $g = 5.70$ at six month-follow-up), depressions ($g = 3.99$ at mid, $g = 7.44$ at post, $g = 8.14$ at four-month-follow-up, and $g = 9.14$ at six-month-follow-up), fear of negative evaluation ($g = .94$ at mid, $g = 2.78$ at post, $g = 3.80$ at four-month-follow-up, and $g = 3.76$ at six-month-follow-up), and irrational beliefs ($g = 1.62$ at mid, $g = 4.17$ at post, $g = 4.92$ at four-month-follow-up, and $g = 5.19$ at six-month-follow-up), as well as increasing students' psychological well-being ($g = 2.20$ at mid, $g = 5.17$ at post, $g = 6.32$ at four-month-follow-up, and $g = 6.48$ at six-month-follow-up).

On and Son (2017) recruited 12 active members of the Reserve Officer's Training Corps (ROTC) and examined the impact of ACT for ROTC members' stress and anxiety. ACT showed a significant decrease in stress ($g = 1.69$ at post and $g = 1.15$ at follow-up) and anxiety (state anxiety: $g = .35$ at post and $g = .73$ at follow-up; trait anxiety: $g = .63$ at post and $g = .39$ at follow-up), compared to the waitlist.

Um and Kim (2017) examined the effect of Acceptance and Commitment Group Counseling on late elementary school children's anxiety and psychological well-being.

The study recruited 38 from two classes. After 10 sessions of therapy, the experimental group showed significantly lower scores in anxiety, such as worry about self ($g = 0.67$), worry about others ($g = .46$), sensitivity ($g = .62$), and physical and sleep issues ($g = .50$) and higher scores in psychological well-being, such as self-acceptance ($g = 1.37$), positive relationship ($g = 1.11$), meaning of life ($g = 1.11$), environmental control ($g = 1.19$), and self-growth ($g = 1.13$) at post compared to the no-treatment control group. There were no significant differences between conditions on autonomy.

You and Son (2018) recruited 14 participants and examined the effects of ACT using a group-based intervention on Complex PTSD symptoms, acceptance, and post-traumatic growth of college students with childhood emotional abuse. The ACT group significantly reduced complex PTSD symptoms level ($g = 1.28$ at post and $g = 1.77$ at follow-up) and improved acceptance ($g = 2.33$ at post and $g = 2.21$ at follow-up) and post-traumatic growth ($g = 2.06$ at post and $g = 1.88$ at follow-up) compared to the no-treatment control group.

Depression

Four studies evaluated ACT for depression. First, Yang and Shin (2013) evaluated ACT with 18 depressed college students. Participants in the ACT condition reported significantly reduced depression ($Z = -2.67, p < .01$) and suicidal ideation ($Z = -2.49, p < .05$) as well as increased psychological acceptance ($Z = -2.38, p < .01$) and well-being ($Z = -2.38, p < .05$) relative to the no-treatment control group.

Kim et al. (2013) examined the effectiveness of ACT on suicidal ideation, depression, and dysfunctional impulsivity among 20 middle school students who reported high suicidal ideation. After eight sessions of therapy, participants reported

significantly reduced suicidal ideation ($g = .99$) and depression ($g = 1.03$), although dysfunctional impulsivity did not show significant change compared to the no-treatment control group.

Kim and Park (2014) examined the effectiveness of ACT-based group therapy for depression by recruiting 31 women. The ACT condition showed a significant reduction of depressive symptoms both at post ($F(2, 56) = 6.82, p < .01$) and relative to the waitlist. In addition, the ACT group showed a significant increase in acceptance ($F(2, 56) = 11.97, p < .001$), self-compassion ($F(2, 56) = 10.63, p < .001$), and mindfulness ($F(2, 56) = 8.26, p < .01$) relative to the waitlist. Changes were maintained at follow-ups (i.e., two months, four months).

Ha and Son (2016) studied the effects of ACT among 16 college students with a high level of smartphone addiction and depression. After 8 sessions of group therapy, participants in the ACT group reported significantly reduced smartphone addiction ($g = 2.30$ at post and $g = 2.56$ at follow-up) and depression ($g = 1.57$ at post and $g = 1.88$ at follow-up) and improved self-control ($g = .66$ at post and $g = .61$ at follow-up) and acceptance ($g = 1.25$ at post and $g = 1.06$ at follow-up) compared to the no-treatment group.

Health

Four studies focused on health issues. Yu and Son (2014) included 10 participants (Korean age range 14-19) and examined the effects of ACT on diabetes stress, self-care, and quality of life among adolescents with type 1 diabetes. After the intervention, although self-care and quality of life were not significantly changed for the ACT group, ACT reduced diabetes stress ($g = .34$ at post and $g = .51$ at follow-up) and increased

acceptance ($g = 1.14$ at post and $g = 1.09$ at follow-up) compared to the no-treatment group.

Kang et al. (2015) recruited 15 female participants and evaluated the effects of ACT on negative emotions and quality of life among breast cancer patients relative to Treatment-As-Usual (TAU). Participants in the ACT group improved on acceptance ($g = 1.34$) and quality of life ($g = 1.37$) relative to TAU, and the results were continued at the six-month follow-up assessment with reduced stress, depression, and anxiety compared to TAU.

Jean et al. (2016) examined the effectiveness of ACT for 41 participants with type 1 diabetes and their families. Participants received a group ACT intervention that consisted of 10 sessions over five weeks. Participants in the ACT group had significantly reduced anxiety (state anxiety: $g = .75$; trait anxiety: $g = .74$) and experiential avoidance while positive self-concept ($g = .27$) and type 1 diabetes adaptation ($g = .92$) significantly increased compared to the waitlist group.

Jo and Son (2018) examined the effectiveness of ACT on IBS symptoms, stress, quality of life, and acceptance with 12 participants with irritable bowel syndrome (IBS). After ten sessions of an ACT group intervention, compared to the no-treatment control group, the ACT group showed positive effects on perceived stress, quality of life, and acceptance but not IBS symptoms.

Stress

Three studies evaluated ACT for stress. Two of them used an ACT group intervention in an organizational context. Moon (2013) examined the effectiveness of ACT on stress reduction for 22 clinical nurses. The results indicated that ACT reduced

job-related stress, $F(1, 19) = 16.67, p < .01$ at post; $F(1, 19) = 5.18, p < .05$ at follow-up, and improved psychological well-being, $F(1, 19) = 9.40, p < .01$ at post; $F(1, 19) = 9.16, p < .01$ at follow-up, psychosocial outcomes, $F(1, 19) = 5.62, p < .01$ at post, against no-treatment.

Cheon and Wang (2014) developed an ACT-based counseling program for employees to cope better with their stress. Two sets of group participants were recruited (Group 1 $n = 19$; Group 2 $n = 20$). ACT groups showed a significant increase in work engagement (Group 1: $g = .61$; Group 2: $g = .78$) and a decrease in job stress (Group 1: $g = .77$; Group 2: $g = .99$) compared to the waitlist.

Lee and Ha (2018) tested the effectiveness of an ACT-based stress management program for 44 in-patients with schizophrenia. The ACT group showed a significant decrease in hospitalization stress ($g = 1.82$) and an increase in self-efficacy ($g = 1.00$) relative to TAU, while the TAU and ACT groups were not significantly different on psychological well-being.

Caregivers of Children with Developmental Disabilities

Three studies evaluated ACT to improve mental health for mothers of children with developmental disabilities. Kim and Son (2011) examined the effectiveness of ACT for 27 mothers of children with developmental disabilities. The ACT condition showed higher psychological well-being ($g = .71$ at post and $g = .49$ at follow-up) as well as lower depression ($g = .60$ at post and $g = .80$ at follow-up) and cognitive fusion ($g = .37$ at post and $g = .25$ at follow-up) compared to the waitlist group. No significant differences were observed on experiential avoidance.

Yang and Park (2014) tested the effects of ACT-based self-compassion-group therapy for 25 mothers of children with developmental disabilities. Compared to the waitlist group, the ACT group reported significantly lower scores of depression symptoms ($g = .07$ at post and $g = 1.11$ at follow-up) and higher scores of acceptance ($g = 1.17$ at post and $g = 1.40$), self-compassion ($g = .22$ at post and $g = 1.76$ at follow-up), and psychological well-being ($g = .52$ at post and $g = .29$ at follow-up).

Park and Kim (2018) developed an ACT-based group art therapy protocol and evaluated its effectiveness for 23 mothers of children with developmental disabilities. The results indicated that the ACT group showed significant improvements in psychological flexibility ($g = .39$) and psychological well-being ($g = .26$) after the intervention compared to the waitlist.

Parenting

Two studies evaluated ACT for parenting distress or anxiety. Lee (2016) examined the effects of ACT on parenting anxiety among 26 mothers of preschool and school-aged children. After the intervention, the ACT group significantly reduced parenting anxiety ($g = .79$ at post and $g = .69$), and increased acceptance ($g = .97$ at post and $g = .92$) and mindfulness ($g = .59$ at post and $g = .73$ at follow-up) compared to the waitlist group.

Song and Jo (2018) evaluated an ACT-based group parenting program with 30 participants. Compared to waitlist, parenting stress ($F(1, 28) = 14.94, p < .01$) and psychological stress (depression, $F(1, 28) = 10.87, p < .01$; anxiety, $F(1, 28) = 11.09, p < .01$) were significantly reduced among participants in the ACT group. Furthermore, parenting sense of competence ($F(1, 28) = 7.78, p < .05$), parenting acceptance ($F(1, 28)$

= 6.36, $p < .05$), mindful awareness ($F(1, 28) = 40.11$, $p < .001$), and self-compassion ($F(1, 28) = 8.21$, $p < .01$) were significantly increased among participants in the ACT group relative to waitlist.

Others Areas of Treatment Focus

Five studies included various presenting problems, such as harm avoidance, value exploration, alcohol dependence, housewives' recollection of early childhood memories, and perfectionism. Yoo and Kwon (2011) studied the effects of ACT among 62 college students with high harm avoidance. After six sessions of ACT group therapy, self-discrepancy ($F(1, 58) = 4.83$, $p < .05$), experiential avoidance ($F(1, 58) = 11.17$, $p < .01$), and state anxiety ($F(1, 58) = 7.66$, $p < .01$) were significantly reduced and subjective happiness ($F(1, 58) = 5.27$, $p < .05$) was significantly increased among participants in the ACT group compared to the no-treatment control group.

Park and Lee (2012) examined the effect of an ACT-based values exploration program among 35 college students. After nine sessions of group treatment, participants in the ACT group showed significant improvements in valued living ($g = .45$) and meaning in life ($g = .50$) and greater decreases in depression ($g = .31$) compared to the no-treatment control group. However, there were no significant changes in psychological well-being, anxiety, and acceptance.

Jeong and Lee (2014) investigated the effects of ACT on the mental health of 24 inpatients with alcohol dependence. After the intervention, patients in the ACT group showed positive changes in emotional acceptance ($g = .64$), positive emotion ($g = .31$), self-esteem ($g = .60$), life satisfaction ($g = .26$), and drinking outcome expectancy ($g = .81$) compared to TAU.

Kim et al. (2015) examined the effects of ACT on cognitive defusion and acceptance among 16 middle-aged housewives. After 10 sessions of group therapy, participants in the ACT group reported significant improvements in cognitive defusion ($g = 1.99$ at post and $g = 1.79$ at follow-up) compared to the no-treatment group, although there was no significant change in acceptance.

Min and Kim (2018) examined the effects of ACT group counseling on perfectionism in a sample of 44 children. After nine sessions of the group program over three weeks, the experimental group showed significantly lower scores in self-oriented perfectionism ($g = .52$) and socially prescribed perfectionism ($g = .77$) as well as behavioral avoidance ($g = .92$) and distraction ($g = 1.03$) relative to the no-treatment control group.

Laboratory Studies

Kwon and Lee (2010) investigated the effects of cognitive defusion using a laboratory design. A total of 56 participants were randomly assigned to four groups based on scores on fear of respiratory symptoms (FRS): top 75th percentile and bottom 25th percentile groups for both control group and cognitive defusion conditions. Three cognitive defusion techniques - “milk milk milk,” “exploring the difference between descriptions and evaluations,” and “leaves floating on a stream” - were presented to the defusion condition. In the control condition, participants read an article about nutrition and health. After the intervention, participants in the cognitive defusion condition reported decreased scores on fear of respiratory symptoms, the believability of a negative thought during a breath-holding task (only in the high FRS group), and increased

willingness and breath-holding duration for both high and low FRS groups compared to the control groups.

Yoo et al. (2013) evaluated cognitive defusion techniques for anger control. After anger arousal was induced by talking about participants' personal experiences, one condition was instructed to use a cognitive defusion technique while the other condition used a block-out-anger technique (experiential avoidance). Both techniques reduced the level of anger and increased the level of anger-relief emotion. The group that used cognitive defusion showed stronger effects on defusion processes than the control group.

Chung and Kim (2017) examined the effects of acceptance in a component study using 52 undergraduate and graduate students. The experimental group received instruction in undermining the control of inner experiences and then acceptance, while the comparison group moved on the acceptance stage without covering undermining control. The results suggested that the experimental group's post-intervention acceptance score was significantly higher than the control group. Correlation analysis revealed that post-score and rate of increase of undermining control were highly relevant to the post-score of acceptance in the experimental group. The increase in acceptance predicted decreases in negative emotion. The study concluded that undermining control (experiential avoidance) as a preparation stage encourages acceptance, but it does not have any distinctive effects for reducing negative emotions.

RCT Studies

Study Characteristics

The systematic literature search identified 31 eligible randomized controlled trials (RCTs) of ACT in South Korea. The majority of trials compared ACT against waitlist

and no-treatment controls ($k = 26$); four studies compared ACT against Cognitive Behavioral Therapy (CBT) while one study compared an ACT group against a health education group. Various problem areas were studied, including anxiety/trauma-related disorders ($k = 11$), somatic/pain concerns ($k = 5$), eating concerns ($k = 3$), depression ($k = 2$), depression and anxiety ($k = 1$), alcohol-related issues ($k = 2$), career development ($k = 2$), and others ($k = 5$). The sample size varied from $n = 6$ to $n = 27$ participants per condition. Nine studies recruited only female participants. Except for three studies, most of the studies used diagnostic/problem severity inclusion criteria (i.e., cutoff scores, diagnosis). All studies used group interventions, which varied from eight to ten sessions. Detailed study characteristics including trial characteristics, control group characteristics, participants' characteristics (sex and age), data formats (M/SD or F test), measures, outcomes (primary and process outcomes), and attrition numbers are described in Table 2. The range of the Jadad scale was from seven to 10, which was coded by two coders. The interrater agreement was .97, and its 95% confidence interval was from .97 to .98.

Anxiety

Eight studies focused on anxiety problems, including social anxiety, test anxiety, speech anxiety, and generalized anxiety. Hwang and Park (2010) examined the effects of ACT on test anxiety for 20 middle school students. After the intervention, the ACT group reduced test anxiety ($g = 1.18$) and negative automatic thoughts ($g = 1.21$) and increased acceptance ($g = 2.32$) and test coping behavior ($g = .93$) compared to the no-treatment group.

Kim and Kim (2012) investigated the effects of ACT on public speaking anxiety among 28 female participants. After eight sessions of therapy, participants in the ACT

group reported lower anxiety sensitivity ($g = .94$) and anxious thoughts ($g = 5.46$) for public speaking anxiety and higher acceptance ($g = 2.87$) compared to the no-treatment group.

Kim and Son (2013) examined the effects of ACT among 22 college students with speech anxiety. After eight sessions of therapy, ACT improved acceptance ($g = .53$ at post and $g = .95$ at follow-up) and reduced social avoidance ($g = .93$ at post and $g = 1.79$ at follow-up), self-focused attention ($g = 1.14$ at post and $g = 3.03$ at follow-up), and speech anxiety ($g = .75$ at post and $g = 3.18$ at follow-up) compared to the waitlist.

Heo and Lee (2016) evaluated ACT for social anxiety among 22 participants with social anxiety symptoms. The results showed significant reductions of social anxiety symptoms ($g = 1.29$), self-focused attention in social situations ($g = .25$), and improvements in acceptance ($g = .84$), mindfulness ($g = 1.18$), and self-kindness ($g = .63$) in the ACT condition compared to the waitlist.

Kim and Son (2016) evaluated ACT for social anxiety among 16 college students with elevated social anxiety symptoms. Participants in the ACT condition showed significantly decreased social anxiety ($g = 1.60$ at post and $g = 1.41$ at follow-up) and rejection sensitivity ($g = .90$ at post and $g = .68$ at follow-up) compared to the waitlist, whereas acceptance ($g = 1.60$ at post and $g = 1.44$ at follow-up) was significantly increased compared to the waitlist.

Ko and Kim (2015) compared CBT and ACT among 21 female university students with social anxiety disorder. Participants were randomly assigned into three groups: ACT, CBT, or no-treatment. Compared to the no-treatment condition, the ACT group showed a significant decrease in cognitive symptoms ($g = 2.26$) and behavioral

symptoms of social anxiety ($g = 1.88$), as well as increased mindfulness ($g = 3.14$) and acceptance ($g = 2.65$). Compared to the CBT group, the ACT group showed larger improvements in mindfulness ($g = 3.83$ at post and 4.61 at follow-up), acceptance ($g = 2.28$ at post and $g = .77$ at follow-up), and negative automatic thoughts ($g = .91$ at post and $g = .29$ at follow-up).

Kim and Son (2013) examined the effects of ACT among 18 college students with interpersonal anxiety. Interpersonal anxiety ($g = 2.29$ at post and $g = 2.74$ at follow-up) and emotion coping styles ($g = 3.52$ at post and $g = 4.18$ at follow-up) decreased more in ACT compared to the waitlist, while problem-focused coping style ($g = 3.89$ at post and $g = 4.66$ at follow-up), social self-efficacy ($g = 2.04$ at post and $g = 2.68$ at follow-up), and acceptance ($g = 1.51$ at post and $g = 1.37$ at follow-up) improved in ACT compared to the waitlist.

Ro et al. (2016) evaluated the effects of ACT among 16 university-students with excess worry. After 10 sessions of ACT-group-based treatment, symptoms of worry ($g = 1.77$ at post and $g = 2.04$ at follow-up), anxiety ($g = 1.81$ at post and $g = 2.56$ at follow-up), intolerance of uncertainty ($g = 2.56$ at post and $g = 1.86$ at follow-up), emotional dysregulation level ($g = .98$ at post and $g = .84$ at follow-up), and experiential avoidance ($g = 1.15$ at post and $g = 1.47$ at follow-up) decreased more in the ACT condition compared to the waitlist.

Anxiety and Depression

One study evaluated ACT for both anxiety and depression. Lee (2017) compared CBT and ACT among 12 participants vulnerable to depression and anxiety. After treatment, both groups reduced depression and anxiety-related symptoms. The ACT

group showed greater decreases in depression ($g = .53$), negative automatic thoughts ($g = .20$), and anxiety ($g = .15$) compared to the CBT group.

Depression

Two studies evaluated ACT for depression. Cho (2012) examined an ACT-based loving-kindness meditation (ACTLM) for 28 depressed students. Participants in the ACTLM group showed greater decreases in depression ($g = 1.20$) and increases in self-compassion ($g = 1.16$), acceptance ($g = .88$), mindfulness ($g = .90$), self-esteem ($g = .83$), personal growth ($g = .85$), and self-acceptance ($g = .89$) relative to a no-treatment control group. In addition, participants in the no-treatment control group showed less activation on the right hemisphere than those in the control group when depressive memory was stimulated.

Oh and Son (2018) evaluated ACT for 22 university students with evaluative concerns and depression. The ACT group improved acceptance ($g = 2.17$ at post and $g = 2.47$ at follow-up) and reduced evaluative concerns ($g = 2.53$ at post and $g = 2.73$ at follow-up), self-criticism ($g = 1.75$ at post and $g = 1.80$ at follow-up), dichotomous thinking ($g = 2.18$ at post and $g = 1.81$ at follow-up) and depression ($g = 2.30$ at post and $g = 2.33$ at follow-up) relative to the no-treatment group.

Trauma

Three studies focused on trauma. Seo and Kim (2012) studied the effects of ACT among 18 female university students with a history of childhood emotional abuse. After the intervention, participants in the ACT group showed significantly higher emotional identification ($g = 1.86$) and emotional expressiveness ($g = .41$) as well as lower

ambivalence over emotional expressiveness ($g = .54$) and negative beliefs ($g = .74$) compared to the no-treatment group.

Noh and Son (2014) evaluated ACT in a sample of 28 adolescents with childhood trauma. Ego-resiliency ($g = 1.04$ at post and $g = .74$ at follow-up) and self-esteem ($g = .91$ at post and $g = .47$ at follow-up) increased more in ACT than the waitlist group while post-traumatic symptoms ($g = .94$ at post and $g = .67$ at follow-up) and interpersonal problems ($g = .96$ at post and $g = .58$ at follow-up) decreased more in ACT than waitlist.

Joo and Son (2015) evaluated ACT for posttraumatic stress symptoms among 24 college students with interpersonal trauma. Participants in the ACT condition showed greater reductions in posttraumatic stress symptoms ($g = 1.26$ at post and $g = 1.68$ at follow-up), complex posttraumatic stress symptoms ($g = 1.11$ at post and $g = 1.29$ at follow-up), negative cognitions ($g = 1.85$ at post and $g = 2.14$ at follow-up), and emotion dysregulation ($g = .55$ at post and $g = .87$ at follow-up) and more improvements in acceptance ($g = 1.10$ at post and $g = .81$ at follow-up) relative to the waitlist group.

Eating-Related Concerns

Three studies evaluated ACT for eating-related concerns. Song and Son (2011) evaluated ACT among 14 college students with binge eating disorder symptoms. After eight sessions, state anger ($g = 1.07$ at post and $g = .70$ at follow-up), anger control stress ($g = .74$ at post and $g = .67$ at follow-up), and binge eating ($g = 2.13$ at post and $g = 2.35$ at follow-up) decreased more in the ACT condition than the waitlist; however, trait anger did not decrease in either condition.

Choi and Son (2011) evaluated ACT among 18 college women with negative body image. ACT improved body esteem ($g = .97$ at post and $g = 1.10$ at follow-up) and self-esteem ($g = 1.05$ at post and $g = .92$ at follow-up), and avoidance ($g = 1.22$ at post and $g = 1.94$ at follow-up) relative to the waitlist.

Kim and Son (2015) evaluated ACT among 14 college students prone to binge eating disorder. After eight sessions, participants in the ACT condition reported reduced binge eating behavior ($g = 1.43$ at post and $g = 1.11$ at follow-up) and experiential avoidance ($g = 1.94$ at post and $g = 2.03$ at follow-up) and increased psychological well-being relative to the no-treatment condition. The effect size for psychological well-being was not calculated due to the inconsistency of data reporting from the manuscript.

Somatic Concerns or Pain

Three studies evaluated ACT for somatic concerns or pain. Lee and Son (2009) evaluated ACT in a sample of 20 participants with atopic dermatitis. After receiving 11 sessions of an ACT group intervention, participants in the ACT condition reported reduced life stress ($g = 1.02$ at post and $g = 1.29$ at follow-up) and anxiety ($g = 2.15$ at post and $g = 2.19$ at follow-up) and increased dermatological quality of life ($g = 1.51$ at post and $g = 1.57$ at follow-up) than the waitlist.

Hong and Son (2015) evaluated ACT among 15 university students with somatic symptoms. The study found positive effects on the reduction of somatic symptoms ($g = 1.48$ at post and $g = 1.18$ at follow-up), self-absorption ($g = .94$ at post and $g = .96$ at follow-up), and experiential avoidance ($g = .96$ at post and $g = 1.91$ at follow-up) in the ACT condition relative to a no-treatment control group. Effects on somato-sensory amplification were not observed.

Shin and Lee (2018) evaluated ACT for 52 elderly people with chronic pain. Participants were randomly assigned to ACT or a health education condition. Participants in the ACT condition reported significantly reduced pain ($g = 1.05$), pain interference ($g = .77$), anxiety ($g = .83$) and psychological inflexibility with pain ($g = .56$) compared to the health education group.

Premenstrual Discomfort

Two studies evaluated ACT for premenstrual discomfort. Yoo and Son (2011) evaluated ACT on menstrual discomfort among 30 college women. Participants in the ACT group reported a greater decrease in menstrual discomforts ($g = 2.43$ at post and $g = 3.25$ at follow-up) and increase in menstrual attitudes ($g = 4.33$ at post and $g = 4.12$ at follow-up), quality of life ($g = 1.70$ at post and $g = 3.09$ at follow-up), and acceptance ($g = 1.46$ at post and $g = 1.88$ at follow-up) compared to the waitlist.

Jung et al. (2017) investigated the effects of ACT on premenstrual symptoms among 21 women with premenstrual syndrome. Participants were randomly assigned into three groups: ACT, CBT, or no-treatment. Compared to the no-treatment group, ACT showed a significant decrease in perceived stress ($g = .85$ at post and $g = 1.38$ at follow-up) and emotional distress from the premenstrual symptoms ($g = 2.16$ at post and $g = 2.82$ at follow-up). Compared to the CBT group, ACT showed a significant decrease in premenstrual symptoms ($g = .22$ at post and $g = .30$ at follow-up) and perceived stress ($g = .77$ at post and 1.19 at follow-up).

Career Development

Two studies evaluated ACT for career development. Ryoo and Kim (2016) examined the effects of an ACT-based program for career decision making among 24

students. After the ACT-based career intervention, participants in the ACT condition improved on acceptance ($g = .52$) and career decision making ($g = 1.57$) compared to the no-treatment group.

Baek and Seo (2018) developed an ACT-based group counseling program to promote career preparation for soldiers and investigated its effectiveness with 24 soldiers. Compared to the no treatment control group, the ACT group improved on career preparation ($g = 1.25$ at post and $g = 1.07$ at follow-up), career barriers ($g = .54$ at post and $g = .38$ at follow-up) and commitment ($g = .71$ at post and $g = .54$ at follow-up), whereas there was no significant change in acceptance.

Alcohol-Related Problems

Two studies evaluated ACT for alcohol-related problems. Jo and Son (2013) examined the effects of ACT among 14 college students with problem drinking. Problem drinking ($g = 1.18$ at post and $g = 1.49$ at follow-up), alcohol expectancies ($g = 1.09$ at post and $g = 1.45$ at follow-up), and perceived stress ($g = .57$ at post and $g = .80$ at follow-up) all improved more in the ACT condition relative to the waitlist group.

Lee and Son (2013) evaluated ACT among 17 individuals with an alcohol use disorder. Participants in the ACT group reported significantly higher psychological well-being ($g = .54$ at post and $g = .34$ at follow-up) compared to the no treatment control group. Although the ACT group reported significantly lower scores on cognitive fusion ($g = .60$ at post and $g = .44$ at follow-up) and experiential avoidance ($g = 1.12$ at post), a significant change in experiential avoidance was not observed at the follow-up assessment.

Others Areas of Treatment Focus

Five studies included various presenting problems, such as harm avoidance, school maladjustment, emotion regulation, perfectionism, interpersonal distress, and smartphone addiction. Jang and Son (2012) evaluated ACT for anger and problem behaviors among 22 adolescents struggling with school maladjustment. After ten sessions of group treatment, participants in the ACT group showed greater decreases in anger ($g = 1.99$ at post and $g = 2.47$ at follow-up), problematic behaviors ($g = 4.54$ at post and $g = 3.39$ at follow-up) and increases in self-esteem ($g = 1.81$ at post and $g = 1.80$ at follow-up) compared to the no-treatment group.

Kim and Son (2012) evaluated ACT for 18 university students with perfectionism concerns. The study found that perfectionism ($g = 4.28$ at post and $g = 4.43$ at follow-up), fear of negative evaluation ($g = 1.79$ at post and $g = 3.74$ at follow-up), experiential avoidance ($g = 1.81$ at post and $g = 3.20$ at follow-up), and self-efficacy ($g = 2.35$ at follow-up) improved in the ACT condition relative to the waitlist.

Heo and Son (2013) evaluated ACT for 16 adolescents with emotion dysregulation concerns. After 8 sessions of group therapy, participants in the ACT group reported improved emotion dysregulation ($g = 2.56$ at post and $g = 1.72$ at follow-up), avoidant emotion regulation scores ($g = .73$ at post and $g = 1.13$ at follow-up), psychological inflexibility ($g = 1.08$ at post and $g = .87$ at follow-up), and emotional clarity ($g = .72$ at post and $g = .70$ at follow-up) relative to the waitlist.

Cho (2013) examined the effects of ACT on interpersonal stress among 36 low-income children who were randomly assigned to ACT, CBT, or no-treatment. The ACT group displayed greater decreases in interpersonal stress compared to the CBT and the

no-treatment groups ($g = .63$ at post and $g = .71$ at follow-up; $g = 2.26$ at post, respectively).

Yu and Son (2016) studied the effects of ACT among 18 college students with smartphone addiction. After 8 sessions of group therapy, participants in the ACT group reported significantly reduced smartphone addiction ($g = 2.78$ at post and $g = 2.79$ at follow-up) and anxiety ($g = 1.22$ at post and $g = 1.39$ at follow-up) and improved self-control ($g = 1.32$ at post and $g = 1.60$ at follow-up) and acceptance ($g = 1.23$ at post and $g = 1.30$ at follow-up) compared to the no-treatment group.

Study 2: Meta-Analysis of RCTs

Outcomes

Aggregating across all 31 RCTs, timepoints, and outcome measures, the overall effect size was statistically significant and large favoring ACT with moderate heterogeneity ($g = 1.33$, 95% CI = 1.08, 1.58, $p < .001$, $k = 31$, $n = 4245$, $I^2 = 51.40$).

Due to the heterogeneity in included studies, the following subgroup analyses were performed based on study characteristics. In order to differentiate different effect sizes primary and secondary, primary only, and process only outcomes were separately calculated when available.

ACT vs. Active Conditions

Of the 31 studies included in the meta-analysis, five studies compared ACT against active conditions (e.g., CBT, Health education group). The effect size for the active conditions with all-time points (i.e., post-treatment, follow-up) and outcomes was significant, with a small effect size in favor of ACT ($g = 0.49$, 95% CI = 0.12, 0.85, $p < .05$, $k = 5$) with no significant heterogeneity ($I^2 = .00$). When examining the effect size

of primary outcomes for the active conditions, a medium effect size with no significant heterogeneity was observed ($g = .58$, 95% CI = 0.21, 0.94, $p < .005$, $k = 5$, $I^2 = .00$).

Separate effect sizes were also calculated only for RCTs comparing ACT and CBT conditions. When an overall effect size for ACT versus CBT conditions with all-time points and all outcomes was calculated, a small trending effect was found favoring ACT ($g = 0.44$, 95% CI = -0.06, 0.93, $p < .10$, $k = 4$, $I^2 = .00$). Pre to post-treatment for ACT versus CBT with all outcomes showed a small nonsignificant effect favoring ACT ($g = 0.40$, 95% CI = -0.09, 0.89, $p > .10$, $k = 4$, $I^2 = .00$). Pre to follow-up for ACT versus CBT with all outcomes showed a significant medium effect size favoring ACT ($g = 0.68$, 95% CI = 0.12, 1.24, $p < .05$, $k = 3$, $I^2 = .00$). Primary outcomes for ACT versus CBT with all-time points showed a nonsignificant small effect favoring ACT ($g = 0.34$, 95% CI = -0.13, 0.81, $p > .10$, $k = 4$, $I^2 = .00$).

ACT vs. Waitlists

Effect sizes from RCTs comparing ACT and waitlist conditions were also calculated. Overall, the effect size for ACT versus waitlist was large and significant, favoring ACT, but significantly heterogeneous ($g = 1.46$, 95% CI = 1.20, 1.71, $p < .001$, $k = 29$, $I^2 = 46.18$). When examining the effect size from primary outcomes for the waitlist conditions, the result showed a large and significant effect size favoring ACT ($g = 1.67$, 95% CI = 1.32, 2.01, $p < .001$, $k = 29$, $I^2 = 69.16$). The overall effect size for process of change outcomes against waitlist condition was also significant and large ($g = 1.39$, 95% CI = 1.08, 1.70, $p < .001$, $k = 20$, $I^2 = 51.01$).

Pre to post-treatment for primary outcomes had a significant and large effect size favoring ACT relative to waitlist ($g = 1.61$, 95% CI = 1.27, 1.94, $p < .001$, $k = 29$, $I^2 =$

68.04). Pre to follow up for primary outcomes showed a significant and large effect size favoring ACT relative to waitlist ($g = 1.82$, 95% CI = 1.34, 2.29, $p < .001$, $k = 21$, $I^2 = 75.74$).

Effect sizes by problem area

A series of subgroup analyses were performed to explore effect sizes in more specific areas. Effect sizes from the primary and secondary outcomes, primary outcome only, process outcome, and different time points were calculated.

Anxiety

Eight studies focused on anxiety, all of which compared ACT to a waitlist or no-treatment control condition. When primary and secondary outcomes with all-time points were used, a large and significant effect size with moderate heterogeneity was found ($g = 1.76$, 95% CI = 1.17, 2.35, $p < .001$, $k = 8$, $I^2 = 57.47$). Pre to post-treatment for primary and secondary outcomes had a significant and large effect favoring ACT relative to waitlist ($g = 1.64$, 95% CI = 1.06, 2.21, $p < .001$, $k = 8$, $I^2 = 57.44$) with moderate heterogeneity. Pre to follow-up for primary and secondary outcomes showed a significant and large effect size favoring ACT relative to waitlist ($g = 2.19$, 95% CI = 1.16, 3.22, $p < .001$, $k = 4$, $I^2 = 66.58$) with moderate heterogeneity.

When effect sizes were calculated from ACT vs. waitlist for primary outcomes only with all-time points, a large and significant effect size with substantial heterogeneity was observed ($g = 1.97$, 95% CI = 1.33, 2.61, $p < .001$, $k = 8$, $I^2 = 62.04$). Pre to post-treatment for primary outcomes only had a significant and large effect size favoring ACT relative to waitlist ($g = 1.87$, 95% CI = 1.23, 2.50, $p < .001$, $k = 8$, $I^2 = 63.71$) with moderate heterogeneity. Pre to follow-up for primary outcomes only showed a significant

and large effect size favoring ACT relative to waitlist ($g = 2.47$, 95% CI = 1.35, 3.60, $p < .001$, $k = 4$, $I^2 = 69.57$) with substantial heterogeneity.

A large and significant effect size with heterogeneity ($g = 1.64$, 95% CI = 1.08, 2.20, $p < .001$, $k = 8$, $I^2 = 58.25$) was observed when used process outcomes with all-time points. Pre to post-treatment for process outcomes had a significant and large effect size favoring ACT compared to the waitlist ($g = 1.62$, 95% CI = 1.02, 2.21, $p < .001$, $k = 8$, $I^2 = 63.54$) with moderate heterogeneity. Pre to follow-up for process outcomes showed a significant and large effect size favoring ACT compared to the waitlist ($g = 1.28$, 95% CI = .78, 1.77, $p < .001$, $k = 4$, $I^2 = .00$) without heterogeneity.

Trauma/PTSD

Three studies focused on trauma/PTSD. A large and significant effect with no significant heterogeneity was found when used all time points and primary and secondary outcomes ($g = 0.99$, 95% CI = 0.50, 1.48, $p < .001$, $k = 3$, $I^2 = .00$) all of which compared ACT to a waitlist. Pre to post-treatment for primary and secondary outcomes had a significant and large effect size ($g = 1.02$, 95% CI = 0.53, 1.50, $p < .001$, $k = 3$, $I^2 = .00$) favoring ACT compared to the waitlist without heterogeneity. Pre to post-treatment for primary outcomes only had a significant and large effect size ($g = .87$, 95% CI = 0.39, 1.34, $p < .001$, $k = 3$, $I^2 = .00$) favoring ACT compared to the waitlist without heterogeneity. Effect sizes for pre to follow-up and process outcomes were not calculated due to the insufficient numbers of studies.

Body Image/Eating Concerns

Three studies focused on body image/eating concerns. A large and significant effect with no significant heterogeneity was found when used all time points and primary

and secondary outcomes ($g = 1.25$, 95% CI = 0.64, 1.86, $p < .001$, $k = 3$, $I^2 = .00$), all of which compared ACT to a waitlist. Pre to post-treatment for primary and secondary outcomes had a significant and large effect size ($g = 1.25$, 95% CI = 0.65, 1.86, $p < .001$, $k = 3$, $I^2 = .00$) favoring ACT compared to the waitlist without heterogeneity. Pre to follow-up for primary and secondary outcomes showed a significant and large effect size favoring ACT compared to the waitlist ($g = 1.25$, 95% CI = .63, 1.86, $p < .001$, $k = 3$, $I^2 = .00$) without heterogeneity.

With same analysis only using primary outcomes with all-time points, the effect was also large and significant ($g = 1.64$, 95% CI = 0.99, 2.28, $p < .001$, $k = 3$, $I^2 = .00$) without heterogeneity. Pre to post-treatment for primary outcomes only had a significant and large effect size ($g = 1.52$, 95% CI = 0.89, 2.15, $p < .001$, $k = 3$, $I^2 = .00$) favoring ACT compared to the waitlist without heterogeneity. Pre to follow-up for primary outcomes only showed a significant and large effect size favoring ACT compared to the waitlist with low heterogeneity ($g = 1.73$, 95% CI = 1.03, 2.44, $p < .001$, $k = 3$, $I^2 = 13.41$). Effect sizes from process outcomes were not calculated due to the insufficient numbers of studies.

Comparing Sample Groups

To further explore heterogeneity in the included studies, a series of analyses were performed to examine effect sizes by key sample characteristics. Effect sizes for primary and secondary outcomes were calculated.

Over versus under 18/high school students. When effect sizes were compared between those over 18 or under 18/high school students, both groups showed large significant effect sizes: over 18 ($g = 1.33$, 95% CI = 1.03, 1.63, $p < .001$, $k = 26$, $I^2 =$

59.14) and under 18 or high school students ($g = 1.52$, 95% CI = 1.02, 2.01, $p = <.001$, $k = 5$, $I^2 = 23.93$).

Clinical or subthreshold versus nonclinical. While the clinical or subthreshold groups displayed a large and significant effect size with significant heterogeneity ($g = 1.33$, 95% CI = 1.02, 1.64, $p < .001$, $k = 25$, $I^2 = 60.17$), nonclinical groups displayed a large significant effect size without significant heterogeneity ($g = 1.46$, 95% CI = .99, 1.93, $p < .001$, $k = 6$, $I^2 = 26.77$).

University students versus non-university students. A large significant effect with significant heterogeneity was observed from the university student samples ($g = 1.52$, 95% CI = 1.16, 1.88, $p < .001$, $k = 20$, $I^2 = 58.31$). Non-university students showed a large significant effect without heterogeneity ($g = 1.13$, 95% CI = 0.77, 1.50, $p < .001$, $k = 10$, $I^2 = 43.87$). One study recruited both samples and was not included in this analysis.

Publication Bias

In order to test publication bias, a funnel plot was examined. The basic assumption of a funnel plot is that larger studies are less vulnerable to the risk of publication bias compared to smaller studies because smaller studies have larger random errors (Song et al., 2013). In this meta-analytic review, Figure 2 funnel plot depicts asymmetric data that has a few studies that have large effect sizes toward the right side of the graph. The asymmetric data indicates a relatively high number of small studies, representing a large effect size, falling toward the right of the mean effect and relatively few falling toward the left, which may actually exist, but are missing from the analysis. This may suggest publication bias, which appeared to influence the overall findings.

Duval and Tweedie's Trim and Fill was used for further exploration of potential publication bias. Trim and Fill is a mathematical method that eliminates the most extreme small studies from the positive side of the funnel plot and then re-iterates the effect size at each computation until the funnel plot is symmetric around the average effect size (Borenstein et al., 2011). After removing unmatched observations from the data distribution and imputing additional values for projected missing studies, the analysis indicates that under the new random-effects model, the point estimate and 95% confidence interval for all 31 studies are 1.33 (95% CI = 1.08, 1.58).

Study 3: Narrative Review of Korean ACT Protocols

Of the 29 RCTs included in Study 2, 14 studies used a protocol from Moon's doctoral dissertation, *Development, and Validation of the Program for Facilitation of Psychological Acceptance Based on Acceptance & Commitment Therapy Model* (2006), which is the first ACT study that was adapted for the Korean population. Moon thoroughly documented the contents of ACT protocols and the changes based on participants' feedback. After completing the initial manuscript, the author conducted a pilot study and revised the protocol based on the feedback from the group participants. As a result, 27 adaptations were made. Detailed information about the adaptations is presented in Table 3.

Another 11 studies combined protocols from Moon's study and other ACT studies. Four studies did not use Moon's protocol and developed their own protocols. Moon's protocol was used to examine cultural adaptation because 86% of studies exclusively used her protocol or combined her protocol and others. See Table 4.

Session content for the initial protocol

The initial protocol developed by Moon (2006) consisted of eight sessions of group therapy. The first session contains a typical group procedure, such as program and participant introductions. The group leaders also discussed barriers to psychological well-being, a model for change, and creative hopelessness to initiate the intervention. Each session from the second to the eighth session started with an awareness practice and previous session review. The second session focused on control is the problem. After addressing the problems with the control agenda, willingness was introduced as an alternative way to respond toward one's unwanted internal experiences. The third session focused on mindful awareness and cognitive defusion (e.g., addressing the function of language). The fourth session covered how to defuse from one's thoughts and feelings and take a non-judgmental attitude toward one's internal experiences. Contact with the present moment was also discussed. The main topic of the fifth session was self-as-context. In order to promote discussion of self-as-context, conceptualized self and self-as-perspective were addressed using various metaphors and activities. The sixth session focused on values. Values-driven living and values clarification were discussed, as well as specific actions that are aligned with one's values. Willingness was discussed during the seventh session. Examples that were discussed during the session were obstacles to willingness, committed action, and not getting stuck with barriers in their life. In the eighth session, the entire program was reviewed, and then group participants shared their feedback and thoughts on completing the program. Therapy assignments were given at the end of each therapy session. Examples of the assignments are "daily experience journal," "records of emotions, thoughts, physical symptoms and how to respond to

them,” “willingness diary,” “practice eating meditation or walking meditation,” “value story record sheet,” and “records of goals, actions, and obstacles.”

Various metaphors and exercises were introduced throughout the group sessions. Examples of metaphors and exercises from Moon’s dissertation are *Assessment of Values, Goals, Actions and Barriers* (Hayes et al., 1999, pp. 222-223), *Attending Your Own Funeral* (Hayes & Smith, 2005, pp. 166-170), *Bad Cup* (Hayes et al., 1999, pp. 168-169), *Chessboard* (Hayes et al., 1999, pp. 190-192, 219, 268), *Eye Contact* (Hayes et al., 1999, pp. 244-245), *Feeling Good* (Hayes et al., 1999, p. 145), *Finding a Place to Sit* (Hayes et al., 1999, p. 108), *Floating Leaves on a Moving Stream* (Hayes & Smith, 2005, pp. 76-77), *Gardening* (Hayes et al., 1999, pp. 219-220, 228), *Man in the Hole* (Hayes et al., 1999, pp. 101-104), *Milk, Milk, Milk* (Hayes et al., 1999, pp. 154-156), *Looking for Mr. Discomfort* (Hayes et al., 1999, pp. 246-247), *Passengers on the Bus* (Hayes et al., 1999, pp. 157-158), *Skiing* (Hayes et al., 1999, pp. 220-221), *Tin Can Monster* (Hayes et al., 1999, pp. 171-174), *Tug of War with a Monster* (Hayes et al., 1999, p. 109), and *Two Scales* (Hayes et al., 1999, pp. 133-134). Most of them were adopted from the existing ACT literature with literal translation rather than creating new metaphors.

Cultural Adaptations to ACT Protocols

As presented in table 3, 8 dimensions of cultural adaptation (i.e., language, people, metaphors, contents, concepts, goals, methods, context) were explored. All materials were written in Korean. All protocols were implemented by Korean therapists to Korean clients. Almost all of the metaphors came from the ACT literature in the U.S. and were literally translated (i.e., Bond & Hayes, 2000; Hayes, 1998; Hayes et al., 1999; Hayes et al., 1990; Strosahl et al., 2004; Twohig, 2004; Walser & Pistorello, 2004; Zettle

& Raines, 1989). One particular metaphor, “Milk, Milk, Milk (우유, 우유, 우유)” was changed into a different word, “Juice, Juice, Juice (주스, 주스, 주스)” due to the pronunciation difficulty, which was addressed based on feedback from group participants. Fifteen changes were made to the protocol after the pilot study was content-related adaptations. For example, the author reduced the number of metaphors, shortened activities, and combined activities. Seven changes were about methods. For example, in order to use group time efficiently, participants completed their pre-assessment before their group session. The other example was that the author clarified group introduction and group structure issues. One change was a concept related to adaptation. Two changes were goal-related adaptations, which were related to set group structure at the beginning of the group intervention. There was one change that was about context. The group leader gave feedback about participants’ therapy assignments.

CHAPTER V

DISCUSSION

The purpose of the current study was to introduce ACT studies in South Korea and examine the efficacy of ACT with Korean populations by reviewing Korean ACT studies systematically and meta-analytically. A total of 60 studies were eligible for the systematic review, including 31 RCTs that were eligible for the meta-analysis suggesting there is a rich literature in South Korea that is perhaps not accessible to non-Korean speaking scholars. Overall, both systematic and meta-analytic reviews showed that ACT has been employed for a wide range of psychosocial problems in South Korea. The majority of the studies from both reviews had small sample sizes and predominantly used a group intervention format. The narrative review of the ACT protocols showed that most of the session contents were translated from English resources; however, several cultural adaptation/ considerations were found.

Study 1: Systematic Review

The aim of Study 1 was to systematically review ACT experimental studies in South Korea. After conducting a comprehensive search, 31 RCT, 24 quasi-experimental, three laboratory, and one single-subject design studies were identified. As presented in Tables 2 and 3, various problem areas were studied. The most frequently studied problem areas were anxiety-related disorders and somatic or health issues. This is consistent with the existing ACT literature when considering evidence that anxiety, pain, and depression were the top problem areas among over 300 published RCTs (ACBS, 2020).

Consistent with the pilot nature of much of the research reported, these studies had several common methodological weaknesses. First, there was a considerable amount

of non-randomized quasi-experimental studies, which were 40 percent of the total studies. This notably differs from the existing ACT literature in other parts of the world. A possible explanation for the heavy use of non-RCTs is that they may be more cost-effective or time-efficient. Most of the studies published were predominantly from theses or dissertations, which might have time restrictions to complete. Additionally, Korean researchers have documented the possibilities of a lack of research funding or education on the necessity of RCTs as reasons why RCTs are relatively underemployed in psychology research in South Korea (Lee et al., 2017). Second, several studies did not properly report information about participants. As tables 2 and 3 noted, several studies did not document participants' demographic information. A possible explanation is due to the high homogeneity of participants. Unlike Western countries, ethnicity and language are less diverse in South Korea. This might have led to less attention towards reporting participant's demographic information. Third, some studies did not clearly report the procedures of their studies. For example, several RCTs did not explicitly document how randomization was carried out. Given that Korean ACT studies had a fair proportion of quasi-experimental studies, authors were contacted to clarify the studies' procedure if they were not clearly reported. Randomization-related information was documented in Table 3. Fourth, almost all non-RCTs studies compared ACT against the no-treatment group, except three studies that compared ACT vs. TAU. Similarly, most RCTs compared ACT against no-treatment groups except five studies that compared ACT to either CBT or, in one case, a health education group. This is similar to the current existing worldwide ACT studies that include many waitlist trials. However, fewer participant numbers of ACT studies that compared to active conditions were observed.

Therefore, due to the small numbers of comparisons between ACT and active conditions that were included in this present study, the effectiveness of ACT compared to active conditions should be cautiously interpreted.

The current study also found unique methodological aspects of Korean ACT studies. All RCTs and most of the quasi-experimental studies in the review used group interventions to examine the effectiveness of ACT. This might be one of the crucial differences from the existing literature from outside of South Korea. This may be another implication of studies being mostly theses and dissertations, which might have relied on group protocols for cost-effectiveness by reducing therapist time. Given the fact that results mostly came from the group interventions, interpretation of the current results should be carefully employed in relation to individual therapy in South Korea.

Study 2: Meta-Analysis of RCTs

A meta-analysis examined the efficacy of ACT in South Korea based on published RCTs to explore whether ACT is an effective treatment for South Koreans. The meta-analysis included 31 RCTs. The overall effect size was statistically significant and large favoring ACT with moderate heterogeneity. Large effect sizes were observed from pre to post-treatment and maintained from pre to follow-up. Subgroup analyses based on problem areas revealed that ACT group showed large effect sizes for anxiety, PTSD/trauma, and body image/eating disorders, which indicates that ACT was effective for diverse psychological problems. This is consistent with the current worldwide ACT literature, which indicates ACT is an effective approach for various psychological problems (ACBS, 2020). Moreover, the current finding is consistent with findings from the previous two meta-analyses that were conducted in South Korea. For example, the

first meta-analysis study that included 43 studies found medium overall effect size as well as medium to large effect sizes among affective, cognitive, and behavioral outcomes (Kim, 2016). Another meta-analysis included 16 studies on depression and 17 studies on anxiety and found a large effect on depression and a moderate effect on anxiety (Lee et al., 2018). However, compared to the current ACT literature in the world, the Korean ACT literature does not have adequate active condition comparisons, and there were insufficient numbers of studies that covered other psychosocial problems to be aggregated in Study 2 as subgroup analyses. Therefore, study design and target problems should be diversified in the future.

Similarly, all subgroup analyses by sample characteristics found similar, large effect sizes, which suggested ACT was equally effective for various sample groups. All paired samples (Over versus under 18; clinical versus nonclinical; university versus non-university samples) showed large and significant effect sizes. This is also consistent with the ACT literature in other parts of the world. ACT has been found effective with various populations, including different age groups, degrees of psychosocial problems, and socioeconomic status (ACBS, 2020).

These findings may provide useful information toward the existing literature about ACT and its effectiveness for Asian or Asian American populations. For example, a study found that Asian Americans used less acceptance-oriented coping and more controlled-orienting coping as compared to White participants, but there were no differences in psychological adjustment between Asian Americans and White Americans (Cook & Hayes, 2010). However, Western contextual psychotherapies, including ACT have been introduced as a promising approach for Asian heritage populations (Hall et al.,

2011), and the current study partially confirmed that ACT is effective for various psychosocial problems among South Koreans. However, although ACT research has been diversified by using samples from various backgrounds over time, it has predominantly used WEIRD samples. Therefore, further investigation is needed evaluating the efficacy of ACT among non-WEIRD samples as well as various Asian populations.

Study 3: Narrative Review of Korean ACT Protocols

Study 3 reviewed Korean treatment protocols and cultural adaptations of ACT in South Korea. The current narrative review found that ACT was adapted for various problems after an initial protocol introduced in 2006 (Moon, 2006). It appears that the protocol was developed from previously existing ACT literature, and most of the contents were initially literally translated into Korean. Then, the author of the first Korean ACT protocol conducted a pilot study to check its feasibility and revised some of the contents based on participants' feedback. After these adaptations, other researchers used the same protocol or revised their treatment protocol based on the presenting problem.

Overall, when considering ACT as a Western therapy that was introduced to Korea, there was little cultural adaptation. This may indicate the prevalence of universalism when it comes to testing psychological theories in South Korea. Although three different research traditions in psychology exist, such as universalist, contextualist, and integrationist approaches (Kim, 2000), Korean researchers may tend to use a universalistic perspective when testing treatment efficacy for Western psychotherapies. This might be relevant to why most of the metaphors in the ACT protocols in South Korea came from ACT in Western research communities. Possibly in order to adhere to therapeutic fidelity, metaphors were mostly literally translated, and those metaphors

seemed to still be effective despite minimal cultural adaptation. Another possible explanation is the success of training and delivering Cognitive Behavioral Therapy (CBT) in South Korea. CBT has been widely taught among clinical psychology graduate programs since the 1990s in South Korea (Kim et al., 2017). In the past decade, this has expanded to include the third wave CBTs, such as Acceptance and Commitment Therapy, Dialectical Behavior Therapy, and Mindfulness-Based Stress Reduction (Park, 2016). A recent survey in 2018 by KCPA revealed the top three primary theoretical orientations among Korean licensed clinical psychologists are Cognitive Behavioral/Behavioral (63.2%), Psychoanalysis/Psychodynamic (10.3%), and Object relations (10.3%; Kwon, 2018). This broad adoption of CBT might contribute to an absence of deeper level consideration on cultural adaptation.

As presented in the results section for study 3, 8 dimensions of cultural adaptation were examined. Understandably, participants and therapists were all Korean, and the Korean language was used. Although some cultural adaptations in other dimensions were made, further active consideration of cultural adaptation, especially the notion of different contexts or populations, was scarce. In order to promote better therapeutic efficacy in South Korea for ACT, which has been widely used as a Western psychotherapy approach, researchers need to continue actively considering cultural differences and similarities.

In addition, although Korea is a homogeneous country, minority populations still exist. For example, according to recent data in South Korea, 1.65 million people, which is almost 3.2% of the total population, are foreign nationals that consist of 32.2% Korean-Chinese, 13% Chinese, 10.2% Vietnamese, 9.1% Thais, 4% U.S. American, and 31.4%

other. (Statistics Korea, 2018). Furthermore, 2% of the total population is multicultural households (Statistics Korea, 2018). Therefore, minority or diverse populations should be more purposefully studied in future research to better address multiculturalism in South Korea.

Strengths and Limitations

The present systematic, meta-analytic, and narrative reviews of ACT introduce existing literature on ACT in South Korea and investigate the efficacy of ACT for various psychosocial problems in this population. The current study has several major strengths. First, this is the first study that systematically introduced Korean ACT studies to English-speaking audiences. Although two meta-analyses reviewed the Korean ACT studies in Korea (i.e., Kim, 2016, Lee & Song, 2018), the reviews were published in Korean, and the results of Korean ACT studies have not been widely introduced to non-Korean speaking researchers. Second, the current study provided comprehensive information about Korean ACT studies by including both quantitative and narrative reviews. One of the main goals for this study was to initiate communication of research findings among worldwide researchers to have a better understanding of the effectiveness of ACT with various populations. The current research findings can be beneficial to better understand the efficacy of ACT in certain populations and problem areas. Third, the current study included important information about multicultural considerations. Unique problem targets or usage of ACT were observed, which might not be found in Western ACT studies. For example, some Korean studies were studied for unique populations, and problem areas (i.e., PMS, mothers with a developmental disability). This may open a

discussion of different applications and/or adaptations to serve various populations in various contexts.

The current study has several limitations. First, the included studies were heterogeneous. Study characteristics, such as comparison groups, problem areas, recruitment criteria, session-related factors, study outcomes, and participants' characteristics notably varied. Second, the methodological quality of the studies was relatively low. For example, included studies tend to have small participant numbers, and participants' demographic information was inconsistently reported. The process of randomization or masking was not clearly reported. Furthermore, most studies were conducted in a group format. Thus, the application or interpretation of the results should be cautious. Third, only published experimental studies were included in this review. There was a tendency that studies came from the authors' theses and dissertations and then published. Therefore, in order to prevent any duplicate-related issues, only published studies were included.

Future Directions

In general, it is recommended that research investigates potential needs and opportunities for cultural adaptation more while maintaining treatment fidelity. Although there was a significant amount of ACT studies published in South Korea, there was scarce discussion of cultural adaptation. This may provide valuable insight into how to make therapy more effective for Korean populations.

Research Directions

The series of current reviews provides future considerations. First, in the future, more active conditions should be compared to ACT. Currently, a large number of studies

used ACT vs. no-treatment control group or waitlist. However, in order to rule out other explanations for improvement (e.g., placebo) and discuss further effectiveness among various treatment conditions, more active conditions are needed. Second, when considering the fact that most studies included in the current review used group-based intervention, it is important to examine the efficacy of ACT in individual therapy. Third, it is important to address the current methodological and reporting issues identified in this review. The current set of included studies had several notable methodological or report-related issues, such as reporting demographic information and research procedures. For example, although South Korea is a homogeneous country in terms of ethnicity, it is recommended to clearly document demographic information as well as provide thorough reports of study design-related information (e.g., randomization and participant allocation). Fourth, it was unclear what types of cultural adaptation researchers used to serve Korean populations better. Therefore, it is also recommended to clearly present the procedure of cultural adaptation and communicate cultural considerations when adopting Western therapies.

Conclusion

The results of both systematic and meta-analytic reviews provide evidence for the efficacy of ACT with Korean populations. The results of this study also provide a glimpse into ACT in South Korea, especially how it performed in research settings. Overall, it appears that ACT has been studied for various psychosocial problems, and its empirical evidence has been documented as an effective therapy for South Korean. Although the present study found some cultural adaptation of ACT in South Korea, more research is needed on how to improve the cultural adaption of ACT while maintaining

treatment fidelity.

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*Quasi-experimental studies

**RCT studies

***Laboratory studies

APPENDICES

Appendix A: Tables

Table 1

Study Characteristics of Quasi-experimental Studies

Authors (year)	Problem area	Conditions	Recruitment	Sample size/ Women %/ Mean Age	Outcome measures	Assessment points	Therapy format/ Therapy duration	Therapist training	Attrition number
Cheon MA & Wang (2014)	Stress	ACT vs WL	People who are currently employed and interested in participating in the study	ACT:9 WL: 10/ ACT:100% WL:80%/ reported by range	Experience Questionnaire (EQ), Utrecht Work Engagement Scale (UWES)	Pre and Post	Group/ 6 (weekly, 120 min per session)	Graduate students who received training mindfulness and completed ACT workshop	0
Ha JM & Son (2016)	Smartphone addiction and depression	ACT vs. CG		ACT: 8, CG: 8/	Self-rated Smartphone Addiction Scale for Adults, Center for Epidemiologic Studies Depression Scale (CES-D), Self-Control Scale (SCS), Acceptance and Action Questionnaire (AAQ)-16	Pre, Post, Follow-up (6week)	Group/ 8 (2 sessions per week, 90 mins per session)	NR	ACT:2 CG:2
Jean C, Yoo, & Choi (2016)	Diabetes	ACT vs WL	People with Type 1 Diabetes and their parent or guardian	ACT: 22 WL:19/ NR / ACT: 33.05, WL: 32.21	State Trait Anxiety Inventory (STAI), AAQ-16, Multiphasic Self-Concept Inventory (MSCI), Type 1 Diabete adaptation, Hemoglobin A1C (HbA1C)	Pre and Post, and only follow-up from the treatment group	Group/ 10 (weekly, 2 sessions a week; total 40 hrs)	NR	0
Jeong NR & Lee (2014)	Alcohol Dependence	ACT vs WL	Diagnosed with Alcohol dependence	ACT: 12 WL: 12/ 50% / reported by range	AAQ-16, Positive Affect and Negative Affect Schedule (PANAS), The Rosenberg Self-Esteem Scale, The Satisfaction with Life Scale (SWLS), Revised Life Orientation Test (LOT-R), Outcome Expectancy Scale (OES-Alcohol), Alcohol Urge Questionnaire (AUQ)	Pre and Post	Group/ 8 (2 sessions per week, 90 min per session)	Graduate student who completed ACT workshop	ACT: 6

Jo & Son (2018)	Irritable bowel syndrome (IBS)	ACT vs WL	Screened by Rome III Adult Questionnaire	ACT: 6 WL: 6/ ACT: 83.33% WL: 66.67%/ Reported by range	IBS Severity Scale, Korean-irritable bowel syndrome-quality of life (K-IBS-QOL), AAQ-16	Pre, Post, Follow-up (4week)	Group/ 10 (60-90mins per session)	NR	ACT: 1 WL:1
Kang MJ, Kim, & Kim, (2015)	Breast Cancer	ACT vs CG		ACT: 6 CG: 9/ 100%/ ACT: 47.17 (3.66), CG: 50.63 (4.00)	Perceived Stress Scale (PSS), Beck Depression Inventory (BDI), STAI, AAQ-16, Functional Assessment of Cancer Therapy Scale-Breat (FACT-B)	Pre and Post	Group/ 8 (weekly, 90-120 min per session)	Graduate students who received training ACT and mindfulness	ACT: 5/11 CG: 1/10
Kim CS, Kang, & Noh (2015)	Cognitive defusion and acceptance of early memory	ACT vs CG	Housewives	ACT: 8, CG: 8/ 100% / reported by age range	Automatic Thoughts Questionnaire (ATQ-N), AAQ-16, Early Recollection Questionnaire	Pre, Post, Follow-up (4 week)	Group/ 10 (weekly, 120 min per session)	Doctoral student who is licensed counselor	CG: 3
Kim HE & Park (2014)	Depression	ACT vs WL	BDI \geq 13 and semi-structure interview based on DSM-IV	Pre post: 15 vs 15, Follow up: 11 vs 15/ 100%/ 23.23 (4.87)	Valued Living Questionnaire (VLQ), Meaning in Life Questionnaire (MLQ), BDI, Beck Anxiety Inventory (BAI), AAQ-II, Subjective Vitality Scale (SVS), Satisfaction with Life Scale (SWLS), Psychological Well-being Scale (PWBS)	Pre, Post, Follow-ups (2 months and 4 months)	Group/ 10 (weekly, 120 min per session)	Clinical psychologist who experienced with ACT	ACT: 5
Kim MS, Ha, Yun, & Park (2013)	Suicidal ideation	ACT vs. CG	Suicidal Ideation Questionnaire score \geq 62 with frequent suicidal ideation and history of self-harm or suicide attempt	ACT: 100%, CG: 80%/ Reported by grade (ACT: 10 second graders, CG 3 first graders, 1 second grader, 6 third graders in middle school).	Suicidal Ideation Questionnaire, K-BDI, Dysfunctional impulsivity scale	Pre and Post	Group/ 8 (60 mins per session)	licensed clinical psychologist	0

Kim MH & Son (2011)	Caregiver stress	ACT vs WL	Mothers of children with developmental disability	ACT: 12, WL: 15/ 100%/ ACT: 38.08, WL: 40.21	Psychological Well-Being Scale (PWBS), BDI, AAQ-16, Automatic Thought Questionnaire-N (ATQ-N)	Pre, Post, Follow-up (1 month)	Group/ 6 (2 sessions per week, 120 min per session)	NR	0
Kim SI & Baik (2013)	Speech Anxiety	ACT vs CG	SAS score \geq 100 (1 SD higher)	ACT: 19, CG: 19/ ACT: 57.9%, WL: 89.5%/ ACT: 18, CG: 18	Speech Anxiety Scale (SAS), Speech anxiety self-efficacy (Korean measure), Speech Anxiety Thoughts Inventory (SATI), SUDS for avoidance	Pre and Post	Group/ 8 (weekly, 90 min per session)	NR	ACT: 2 CG: 6
Kim SK (2013)	Anxiety	ACT vs WL	Anxiety screened by K-MINI-plus	ACT: 27, WL: 27/ ACT: 51.9%, WL: 70.4%/ reported by range 14-16	State-Trait Anxiety Inventory (STAI), Anxiety Sensitivity Index (ASI-R), Anxiety Control Questionnaire-Revised (ACQ-R), K-MINI-plus (Screening)	Pre, Post, Follow-up (4week)	Group/ 8 (2 sessions per week, 120 min per session)	Clinician	ACT: 6
Kwon SI & Chung (2014)	Social anxiety	ACT vs CG	SAD score \geq 92 (high 15%)	46 vs 32/ ACT: 25 /40 (62.5%), WL: 25/38 (65.8%)/ ACT: 24.7, WL: 23.9	Social Anxiety and Distress Scale (SADS), BDI, Fear of Negative Evaluation Scale (FNE), Irrational Beliefs Test (IBT), Psychological Well-Being Scale (PWBS)	Pre, Mid, Post, Follow-up 1 (4 months), and Follow-up 2 (6 months)	Group/ 10 (weekly, 120min per session)	Graduate student and staff member at a university counseling center	ACT: 6, WL: 4
Lee JW & Ha (2018)	Stress management for inpatients with schizophrenia	ACT vs WL	1) Inpatients who diagnosed with schizophrenia 2) Communication possible 3) interested in the group (Exclusion: no other psychiatric	22 vs 22/ ACT: 9 (40.9%), WL: 10 (45.5%)/ ACT : 47.14 (10.23), WL : 44.68 (8.94)	Hospitalization stress, Self-Efficacy Scale, Psychological Well-being (MIDUS-II version)	Pre and Post	Group/ 8 (2 sessions per week, 50 mins per session)	Psychiatric nurses	ACT: 4 WL: 4

			disorders or alcohol issues						
Lee SA (2016)	Parenting anxiety	ACT vs WL	Mothers	13 vs 13/ 100% / ACT: 30s (7) 40s (6), WL: 30s (6), 40s (7)	Parenting Anxiety Scale, AAQ-16, Mindfulness scale	Pre, Post, Follow-up (4week)	Group/ 6 (weekly, 150 mins per session)	Graduate student	0
Lee SY & Ahn (2012)	Anxiety	ACT vs WL	K-MINI-plus or reported significant social or functional impairment	27 vs 27/ ACT: 14 (51.9%), WL: 19 (70.4%)/ reported by range 20-30, 30-40, 41+	K-Mini-plus (Screening), BDI, STAI, PWBS, Thought Suppression Inventory, AAQ-II, Anxiety Sensitivity Index (ASI-R), Anxiety Control Questionnaire-Revised (ACQ-R), K-Kentucky Inventory of Mindfulness Skills, Symptom Checklist-90-Revised (SCL-90-R), Subjective notes	Pre, Post, Follow-up (10 week)	Group/ 10 (weekly, 120 min per session)	Clinical psychologist who has at least 7 years of experience	ACT: 4
Min IK & Kim (2018)	Perfectionism	ACT vs. CG	Elementary school students	22 vs 22/ ACT 50% CG: 45.45% /6 th graders	Child and Adolescent Perfectionism Scale (CAPS), Multidimensional Experiential Avoidance Questionnaire (MEAQ)	Pre and post	Group / 9 session for 3 week (40 mins per session)	Completed a workshop	0
Moon IS (2013)	Job stress	ACT vs WL	Clinical nurses	11 vs 11/ NR/ ACT 35.36, WL: 31	Burnout Scale, Psychological Well-being Scale (PWBS), Psychosociological Well-being Inventory (PWI-SF), AAQ-16	Pre, Post, Follow-up (4 week)	Group/ 8 (weekly, 180 min per session)	Master's student who is a licensed counselor	0
On AK & Son (2017)	Stress and Anxiety among ROTC	ACT vs WL	ROCT, PSS >= 15 STAI >= 80	6 vs 6/NR/ age 22 (58.33%)	Perceived Stress Scale (PSS), State Trait Anxiety Inventory (STAI), AAQ-16	Pre, Post, Follow-up (4week)	Group/ 8 (2 sessions per week, 90 mins per session)	NR	0
Park JH & Kim (2018)	Psychological well-being of caregivers	ACT vs WL	Mothers who have a child with developmental disabilities	11 vs 12/ 100%/ ACT: 29-45, WL: 34-43	PWBS, AAQ-II	Pre and Post	Group/ 13 (weekly, 120 mins per session)	NR	0

Park SR & Lee (2012)	Values exploration	VG vs CG	Participant who were interested in group	16 vs 19/ ACT: 9 WL: 13/ 27.47 (3.37)	Valued Living Questionnaire (VLQ), Meaning in Life Questionnaire (MLQ), BDI, BAI, AAQ-II, Subjective Vitality Scale (SVS), Satisfaction with Life Scale (SWLS), Psychological Well-being Scale (PWBS)	Pre and Post	Group/ 9 (weekly, 80 min per session)	NR	ACT: 11 WL: 6
Song JH & Jo (2018)	Parenting stress	ACT vs WL	Parents whose parenting stress index scores are ≥ 80	15 vs 15/ 100%/ ACT: 40.73 (4.33), WL: 42 (7.12)	Parenting Stress Index, Parenting Sense of Index (P.S.O.C), Korean Parental Acceptance Questionnaire (K-4-PAQ), BDI, BAI, AAQ-II, Korean Mindful Attention Awareness Scale (K-MAAS), The Korean Self-Compassion Scale (K-SCS)	Pre and Post	Group/ 8 (weekly, 180 min per session)	NR	ACT: 5, WL: 5
Um BB & Kim (2017)	Anxiety and psychological well-being	ACT vs. CG	None	19 vs 19/	K-Revised Children's Manifest Anxiety Scale (RCMAS) for adolescents, K-Psychological Well-Being Scale	Pre and post	Group / 10 (40 mins per session)	NR	0
Yang SM & Park (2014)	Caregivers' mental health	ACT vs WL	Mothers of children with developmental disability	12 vs 13/ 100%/ ACT: 37.29 WL: 41.50	Personal Feeling Questionnaire-2 (PFQ-2), BDI, AAQ-16, Korean version of Self-compassion Scale (K-SCS), Psychological Well-Being Scale (PWBS)	Pre, Post, Follow-up (4 week)	Group/ 8 (weekly, 120 min per session)	NR	ACT: 3
Yang SY & Shin (2013)	Depression	ACT vs WL	1) BDI ≥ 16 and SSI ≥ 9 . Exclusion: 1) receiving current psychiatric treatment	9 vs 9/ NR/ NR	AAQ-16, Psychological Well-Being (PWBS), BDI, Scale for Suicide Ideation (SSI)	Pre and Post	Group/ 8 (90 min per session)	Clinical psych license level 2 and Graduate student. Completed ACT workshop	ACT: 8 WL: 1
Yoo SJ & Kwon (2011)	Harm avoidance	ACT vs WL	high TCI score	28 vs 34/ ACT: 32/34 (94.1%), WL: 32/34	Temperament and Character Inventory (TCI), AAQ-16, State-Trait Anxiety Inventory Form Y (STAI-Y),	Pre and Post	Group/ 6 (weekly, 150 per session)	NR	ACT: 6

				(94.1%)/ ACT: 36.41 (7.41), WL: 22.62 (1.63)	Positive and Negative Affect Schedule (PANAS), Subjective Happiness Scale (SHS)				
You SB & Son (2018)	PTSD	ACT vs CG	Emotional abuse scale score high 25%, Complex PTSD score high 25%, AAQ-II score high 25%	7 vs 7/ 85.7%/ reported by grade junior and senior: 42.9%	Emotional Abuse scale, Korean version Posttraumatic Growth Inventory (K-PTGI), AAQ- II, Complex Posttraumatic Stress Disorder Symptoms Scale	Pre, Post, Follow-up (6week)	Group/ 8 (100- 120 mins per session)	NR	0
Yu DS & Son (2014)	Diabete	ACT vs CG	Inclusion: 1)age 14-19 with Type 1 diabete, 2) diagnosed was given more than one year 3) HbA1c>7, 4)intererested in participate in the program / Exclusion: 1) diagnosed with psyciatric disorders or currently in therapy 2) have chronic disease other than diabete.	5 vs 5/ ACT: 3 (60%), CG: 2(40%)/ ACT: 14-15 (1), 16-17 (1), 18-19 (3), CG: 14- 15 (1), 16-17 (3), 18-19 (1)	Stress on Diabetes Scale (SDS), Self-Care Scale (SCS), Pediatric Quality of Life Inventory version 4.0 Generic Core Scales (PedsQL 4.0), AAQ 16	Pre, Post, Follow-up (1 month)	Group/ 8 (2 sessions per week, 90-120 min per session)	NR	0

Table 2.

Study Characteristics of RCT studies

Authors (year)	Problem area	Conditions	Recruitment	Sample size/ Sex/ Age	Outcome measures	Assessment points	Therapy format/ Therapy duration	Therapist training	Attrition number	Jadad score
Back JI & Seo (2018)	Career development	ACT vs CG	NR	12 vs 12/ 0%/ NR	1)Career preparation behavior, 2)Career barrier scale, 3)AAQ-II (Acceptance only), 4)Commiment subscale from AAQ-16	Pre, Post, Follow-up (4 week)	Group/ 8 (90min per session)	NR	0	8
Cho HA (2013)	Interpersonal distress	ACT vs CBT vs CG	5th grades from low income family (4 family members with underage child whose income is under \$1380)	12vs12vs12/ ACT: 66.67%, CBT: 41.67%, CG: 41.67%/ NR (But all 5th grade)	1)Interpersonal Relationship Stress Scale	Pre, Post, Follow-up (1 month)	Group/ 8 (50 min), Weekly	Graduate student who has counselor liscense and completed ACT workshop	0	9
Cho HJ (2012)	Depression	ACT vs CG	CES-D score \geq 16	14 vs 14/ NR/ ACT: 21.79, CG: 21.71	1)The Center for Epidemiological Studies-Depression (CES-D), 2)Hospital Anxiety and Depression (HAD), 3) Korean-version of Self-compassion Scale (K-SCS), 4)Mindfulness Scale (MS), 5)AAQ-16, 6)Self-Esteem Questionnaire (SEQ), 7)Psychological Well-Being Scale (PWBS), 8) EEG	Pre, Post, Follow-up (4 week tx group only)	Group/ 8 sessions	Psychologist who has Ph.D	1	8

Choi YY & Son (2011)	Body image issue	ACT vs WL	Body dissatisfaction high 25% and high avoidance from high K-BICSI	9 vs 9/ 100%/ 21.6	1)Body Esteem Test (BET), 2)Body Cathesis Scale (BCS), 3)K-The Body Image Coping Strategies Inventory-avoidance (K-BICSI-avoidance), 4)Self-Esteem Scale	Pre, Post, Follow-up (4 weeks)	Group/ 8 (90-120 per session)	NR	3	8
Heo SM & Lee (2016)	Social anxiety	ACT vs. WL	SADS score ≥ 93 (high 15%)	11vs11/ ACT: 45.5%, CG: 54.5%/ ACT:24.4, CG:24.1	1)Social Anxiety and Distress Scale (SADS), 2)AAQ-II, 3)Korean version of Kentucky Inventory of Mindfulness Skills (K-KIMS), 4)Korean version of Self-Compassion Scale (SCS), 5)Scale for Dispositional Self-focused Attention in Social situation, (SDSAS)	Pre, Post, Follow-up (4week)	Group/ 8 (150min per session), Weekly	Graduate student who completed ACT workshop and multiple group experiences	ACT:2, WL:1	8
Heo YS & Son (2013)	Emotion regulation	ACT vs WL	K-DERS score 78.43 \pm 17.20, TMMS high 25%, ERSC high 25%, SRSS high 25%, AAQ-II high 25%	8 vs 8/ 100%/ NR (but reported as grade ACT: 1st and 3rd grades, WL 2nd and 3rd grades	1)Difficulties in Emotion Regulation Scale (DERS), 2)Trait Meta-Mood Scale (TMMS), 3) Emotion Regulation Style Checklist(Avoidance based), 4)Study Related Stress Scale, 5)AAQ-II	Pre, Post, Follow-up (4 week)	Group/ 8 (100min per session) 2 sessions per week	Graduate student	6 (ACT:3 WL:3)	8
Hong MN & Son (2015)	Somatic symptoms	ACT vs. CG	experienced somatic symptom (screened)	8 vs 7/ ACT: 75%, CG: 57.1%/ NR (but reported as range)	1)Somatic Symptom Scale, 2)Somato-Sensory Amplification Scale, 3)Scale for Dispositional Self-focused Attention, 4)AAQ-16	Pre, Post, Follow-up (5 weeks)	Group/ 8/ 8 (120 min per session), 2 sessions per week	Graduate student who completed ACT workshop	ACT:2 WL:2	8
Hwang SO & Park (2010)	Test anxiety	ACT vs CG	NR	10 vs 10/ 65%/ 14.8	1)AAQ-16, 2)K- The Test Anxiety Inventory , 3)Automatic Thought Questionnaire-Negative, 4)Test-coping behavior	Pre, Post	Group/ 10 (90min per session)	NR	0	7
Jang SY &	School maladjustment	ACT vs. CG	Anger high 30% and Teacher's CBCL ≥ 65	11 vs 11/ ACT: 45.5 %,	1)State-Trait Anger Expression Inventory-Korean (STAXI-K),	Pre, Post, Follow-up (10 weeks)	Group/ 10 (120 min per	Graduate student who learned ACT	0	8

Son, (2012)	(Behavioral problem)			CG:36.4%/ NR	2)Korean-The Child Behavior Checklist (K-CBCL), 3)Self-Esteem Scale		session) 2 sessions per week			
Jo YJ & Son (2013)	Alcohol issue	ACT vs WL	AUDIT-K score \geq 12, PDST score \geq 3	7 vs 7/ ACT:28.6%, CG:28.6%/ NR (but range ACT: 18-25, CG:20-27)	1)The Korean Version of Alcohol Use Disorders Identification Test (AUDIT-K), 2)Problem Drinking Screening Test (PDST), 3)Alcohol Expectancy Scale (AES), 4) Perceived Stress Scale (PSS)	Pre, Post, Follow-up (4 week)	Group/ 8 (120min per session) 2 sessions per week	NR	0	9
Joo SJ & Son (2015)	Trauma (PTSD)	ACT vs WL	experienced at least one traumatic event, PTSD symptoms score \geq 11, scored complex PTSD, high 25% on DERS and AAQ-16, PTCI	12 vs 12/ ACT 58.33%, CG: 75%/ ACT:23, CG:21	1)Posttraumatic Diagnostic Scale (PDS), 2)Complex posttraumatic Stress Symptoms Scale (CPSSS), 3)Posttraumatic Cognitions Inventory (PTCI), 4)Difficulties in Emotion Regulation Scale (DERS), 5)AAQ-16	Pre, Post, Follow-up (8 week)	Group/ 8 (120 min per session), 2 sessions per week	Graduate student who completed ACT workshop	ACT: 4 WL: 4	8
Jung MJ, Na, & Son (2017)	Premenstrual syndrome (PMS)	ACT vs CBT vs CG	diagnosed with Premenstrual syndrome(PMS)	6vs7vs7/ 100%/ NR (but reported range 19, 20-24, 25-29	1) The Shortened Premenstrual Assessment Form (SPAF), 2)Attitudes toward menstruation, 3)perceived stress	Pre, Post, Follow-up (1month	Group/ 10 (60min per session)	Graduate student who completed seminars and training for both ACT and CBT	1	9
Kim AR & Son (2015)	Binge eating	ACT vs CG	BES score \geq 18	7 vs 7/ 100%/ ACT: 26, WL:23.57	1) Binge Eating Scale (BES), 2)AAQ-16 (5 likert), 3)Psychological Well-Being Scale (PWBS)	Pre, Post, Follow-up (8week)	Group/ 8 (90-120min per session), 2 sessions per week	Graduate student who completed ACT workshop and experienced multiple group therapy	ACT:1, WL:2	8
Kim DH & Son (2016)	Social anxiety	ACT vs WL	SADS score \geq 82	8 vs 8/ ACT: 55.6%, WL:50%/	1)Social Avoidance and Distress Scale (SADS), 2)The Rejection	Pre, Post, Follow-up (5week)	Group/ 8 (120min per session) 2	Graduate student who completed	0	8

				ACT:21 WL:24	Sensitivity Questionnaire (RSQ), 3) AAQ-II		sessions per week	ACT workshop		
Kim HE & Kim (2012)	Public speaking anxiety	ACT vs. CG	Speech Anxiety thought score ≥ 90	14 vs 14/ 100%/ NR	1)Speech Anxiety Thought, 2)K-BAI, 3)Anxiety Sensitivity Inventory, 4)AAQ-II	Pre, Post	Group/ 8 (120min per session) Weekly	NR	3	8
Kim JE & Son (2012)	Perfectionism (Evaluative)	ACT vs. WL	MPS-F, MPS-H, BFNE, SES cutoff	9 vs 9/ NR/ NR	1)Multidimensional Perfectionism-H (MPS- H), 2)Multidimensional Perfectionism Scale (MPS-F), 3)AAQ-16, 4)Brief-Fear of Negative Evaluation Scale (BFNE), 5)Self-Esteem Scale (SES)	Pre, Post, Follow-up (6 weeks)	Group/ 8 (120min per session) 2 sessions per week	Graduate student	6	8
Kim JM & Son (2013)	Speech anxiety	ACT vs WL	Speech Anxiety thought score ≥ 71, SFA score high 25%, SADS score ≥82	10 vs 10/ ACT: 50%, WL:70%/ ACT: 24, WL: 24	1)Social Avoidance and Distress Scale (SADS), 2)Self Focused Attention (SFA), 3)Speech Anxiety Scale (SAS), 4)AAQ-16	Pre, Post, Follow-up (4 week)	Group/ 8 (120 per session) weekly	Graduate student who completed ACT workshop	2	8
Kim MO & Son (2013)	Social anxiety (interpersonal anxiety)	ACT vs. WL	IAS high 25%	9 vs 9/ ACT:55.5%, CG:66.67%/ NR (but range 19-28)	1)Interaction Anxiousness Scale (IAS), 2)The Ways of Coping Checklist (problem-focused and emotional focused), 3)Social Self-Efficacy Scale (SSES), 4)AAQ-II	Pre, Post, Follow-up (5 weeks)	Group/8 (120min per session) 2 sessions per week	NR	2	8
Ko YJ & Kim (2015)	Social anxiety	ACT vs. CBT vs. CG	Diagnosed with SAD, SADS score ≥ 82	7vs7vs7/ 100%/ 19-24 (also reported # of college year)	1)Social Avoidance and Distress Scale (SADS), 2)Dysfunctional Beliefs Test (DBT), 3)Social Interaction Self- Statement Test (SISST), 4)Behavior Checklist for Performance Anxiety, 5)Social Interactive Anxiety Scale (SIAS), 6)Self Assertive Behavior Scale, 7)Korean Version	Pre, Post, Follow-up (3 months, but not all measures)	Group/10 (120min per session), 2 sessions per week	Graduate student who completed ACT and CBT workshop	0	8

					of the Cognitive and Affective Mindfulness Scale-Revised (K-CAMS-R), AAQ-II, Psychiatric Diagnostic Screening Questionnaire (PDSQ)					
Lee JH & Son (2013)	Alcohol issues	ACT vs. WL	Inpatient with alcohol addiction, WAIS IQ 90, No personality disorder	7 vs. 10/ NR/ NR	1)Psychological Well-being Scale (PWBS), 2) AAQ-16, 3)Automatic Thought Questionnaire-N (ATQ-N)	Pre, Post, Follow-up (5 weeks)	Group/ 10 (90min per session), Weekly	Clinical Psychologist and Graduate student	ACT:8, WL:5	8
Lee JY & Son (2009)	Atopic Dermatitis	ACT vs WL	Inclusion: 1) high 20% (DHS ≥ 48 , SAI $> +41$, Skindex-29 ≥ 71) 2) interested in group	10 vs 10/ ACT: 7 (70%), CG: 8 (80%)/ ACT: 25 (range 21-31), CG: 26 (range 21-30)	Daily Hassles Scale for Korean Worker, State Anxiety Inventory (SAI), Skindex-29,	Pre, Post, Follow-up (4 week)	Group/ 11 (2 sessions per week, 90-120 min per session)	graduate students	0	7
Lee KH (2017)	Depression /anxiety	ACT vsCBT	High 25% RRMS and PSWQ,	6vs6/ ACT:66.67%, CBT:16.67%/ ACT:22.17, CBT:21	1)Rumination Response Mode Scale(RRMS), 2)Penn State Worry Questionnaire (PSWQ), 3)State-Trait Anxiety Inventory (STAI), 4)BDI, 5)AAQ-16, 6)Dysfunctional Attitude Scale-40 (DAS-40), 7)Automatic Thought Questionnaire (ATQ)	Pre, Post	Group/ 8 (90min per session), weekly	Clinical psychologist	CBT:2 ACT:1	10
Noh PR & Son (2014)	Childhood Trauma	ACT vs WL	High 25% RRMS and PSWQ,	14 vs 14/ 0%/ ACT:16.24, CG:15.85	1)Childhood Trauma Questionnaire (CTQ; screening only), 2)Child Report of Post-Traumatic Symptoms (CROPS), 3)Self-Esteem Scale, 4)Ego-Resiliency Scale (ER), 5)Inventory of Interpersonal Problems (IIP)	Pre, Post, Follow-up (1 month)	Group/ 8 (60min per session)	Graduate student who completed ACT workshops	2	9

Oh JE & Son (2018)	Depression	ACT vs. CG	FMPS, HMPS, CES-D, cutoff	11 vs 11/ NR/ 23	1)FMPS + HMPS 2) Depressive Experiences Questionnaire (DEQ; Self-criticism only), 3)Dichotomous Thinking Index-30 Revised (DTI-30-R), 4)Center for Epidemiologic Studies - Depression Scale (CES-D), 5)AAQ-16	Pre, Post, Follow-up (6week)	Group/ 8 (100min per session) 2 sessions per week	Graduate student	ACT:1 WL:1	8
Ro JY, Kang, & Son (2016)	Excessive worry	ACT vs. WL	PSWQ score \geq 56, STAI \geq 52,	8 vs 8/ NR/ NR	Penn State Worry Questionnaire (PSWQ), STAI, Intolerance of Uncertainty Scale (IUS), Korean Version of Difficulties in Emotional Regulation Scale (K-DERS), AAQ-16	Pre, Post, Follow-up (6week)	Group/ 10 (2 sessions per week, 100 min per session)	NR	ACT:1 WL:1	8
Ryoo MK & Kim (2016)	Career development	ACT vs CG	None	12 vs 12/ 100%/ NR (but all freshman in highschool)	1)AAQ-II, 2)Career Decision Scale (CDS)	Pre, Post	Group/ 8 (90min per session) 2 sessions per week	A Ph.D. candidate who is a school counselor	0	7
Seo MJ & Kim (2012)	Childhood Emotional Abuse	ACT vs. CG	Childhood emotional abuse scale high 30%	9 vs 9/ 100%/ NR	1)Mood Awareness Scale (K-MAS), 2)Emotional Expressiveness Scale (EES), 3)Ambivalence Over Emotional Expressiveness Questionnaire (AEQ), 4) Belief on emotion express (Negative Belief)	Pre, Post, Follow-up (10 weeks)	Group/ 8 (90min per session) weekly	NR	2	8
Shin JS & Lee (2018)	Pain	ACT vs. Health Education	experience chronic pain at least 6 months, pain intensity is greater than 5	25 vs 27/ ACT: 96%, Health Edu: 88.9%/ ACT: 77.84, Health education:77.37	1)Brief Pain Inventory (BPI), 2)The Satisfaction With Life Scale (SWLS), 3)Self-efficacy scale, 4)Hospital Anxiety and Depression Scale (HADS), 5) The Psychological	Pre, Post	Group/ 8 (90min per session) weekly	Graduate student who completed ACT workshop	ACT:5, Health: 3	9

					Inflexibility in Pain Scale (PIPS), 6)Tampa Scale for Kinesiophobia-11 (TSK-11), 7)Pain Catastrophizing Scale (PCS)					
Song HJ & Son (2011)	Eating disorder	ACT vs WL	binge eating score > 18	7 vs 7/ 87.5%/ NR	1)Binge Eating Scale, 2)State-Trait Anger Expression Inventory-Korean (STAXI-K), 3)Stress Scale, 4)Emotional Eating Scale	Pre, Post, Follow-up (4 week)	Group/ 8 (90-120min per session)	Graduate student who completed ACT workshop	2	8
Yoo MR & Son (2011)	Menstrual discomfort	ACT vs. WL	PMS symptoms high 25% (cutoff score 90) or experiencing significant menstrual discomfort at least one day during the period / No hormone and birth control, no mental health issues, no delivery experience, no endometriosis	14 vs 14/ 100%/ NR	1)Menstrual Discomforts Symptom Scale, 2)Menstrual Attitudes Scale, 3)Quality of Life Scale, 4)AAQ-16	Pre, Post, Follow-up (3 months)	Group/ 10 (150 min per session)	NR	2	8
Yu HG & Son (2016)	Smartphone addiction	ACT vs CG	SAPS-A score \geq 40	9 vs 9/ ACT:55.6%, CG: 66.7%/ NR (but reported as range)	1)Smartphone Addiction Proneness Scale for Adults (SAPS-A), 2)Self-Control Rating Scale (SCRS), 3)Spielberger Trait Anxiety Inventory (STAI), 4)AAQ-16	Pre, Post, Follow-up (4week)	Group/ 8 (120min per session) 2 sessions per week	Graduate student who completed ACT workshop	0	9

Table 3.

The initial protocol and eight dimensions of cultural adaptation

Feedback	Modification	8 dimensions
“It takes a lot of time to complete the questionnaire, which interferes with the session progress.”	Participants were told to complete the pre-test questionnaires and then brought them before the start of the group.	<i>Methods</i>
“Since the number of people is over 10, it takes a lot of time to introduce myself.”	Participants share three contents as the introduction: affiliation, a reason to create a nickname, and motivation to participate	<i>Methods</i>
“Guidance is needed if participants expect unstructured and interactive group counseling.”	Create guidelines in advance and use it during the first session to establish structure.	<i>Goals</i>
“There is not enough room to form group cohesion since there are many things to be done in the first session.”	Reduce the numbers of control related metaphors and only provide two.	<i>Contents</i>
“It is necessary to focus on the main issues of the participants.”	Use a record of ‘finding obstacles’ that hinder psychological well-being or quality of life.	<i>Contents</i>
“The method of recording in detail the reaction to the inner experience in the daily experience log is complicated, and there are other tasks, so it is necessary to change the contents and frequency of the record.”	The daily experience journal is now recorded three times, and the focus of observation is placed on the control agenda. The record is modified a little by moving to a private experience.	<i>Contents</i>
“It would be more efficient for personal application to proceed with ‘rigidity of control’ after dealing with individual ‘control agenda.’”	Change the order of proceedings to ‘control agenda’ and ‘rigidity of control.’	<i>Contents</i>
“The search for ‘personal programming’ and ‘laws of life games’ is redundant.	The two tasks are combined. Then, participants are encouraged to work on observing inner experiences toward control reactions in the daily experience journal.	<i>Contents</i>
“There was a spatial difficulty while doing mindful walking.”	Replace this activity with ‘stretching your mind.’	<i>Methods</i>

“It would be more connective to do ‘recognizing the function of the language of the mind’ after the mindful awareness work.”	Change the order of ‘recognizing the function of the language of the mind’ and cognitive defusion.	<i>Contents</i>
“In the ‘Milk, Milk, Milk’ metaphor, it is not easy to pronounce the word milk in Korean. Also, there might be a person who hates milk so that the stimulation function may be different.”	The word ‘juice’ is used instead of ‘milk.’	<i>Metaphors</i>
“It is tight to cover all of the small activities.”	Subtract the activities of ‘recognizing the function of language’ and ‘cognitive defusion’ for ‘reasons for a problem’ and ‘speaking with thinking and feeling.’	<i>Contents</i>
‘Objectifying experience’ was a very effective work for the strategy of ‘Improving distance-keeping skills for private experiences,’ but it required a lot of time as it was carried out individually	To secure the time of activity, ‘parade analogy and practice,’ which is another intervention method of the distance-separation strategy, can be used by placing the first element in the ‘cognitive defusion’ element, so it is conducted in the 3rd session./ ‘Thinking, holding an emotion card’ is also appropriate in the ‘experience for commitment’ section, so move to the 7th session.	<i>Contents</i>
“Since there are fewer chances to deal with the inner experience that is currently taking place in the group, it would be more efficient to use the analogy and practice of observing tin monsters in ‘distance’ rather than ‘contacting the current experience.’”	Move ‘Observing the tin monsters’ from the contact the present moment section to the distancing section. Conduct it after the ‘objectifying experience.’	<i>Contents</i>
“In the activity of ‘contacting the present moment,’ mindfulness eating by using raisin alone is not enough.”	Include ‘observe current experience’ in the ‘contacting present moment’ section.	<i>Contents</i>

“It is necessary for the group members to do the ‘experience labeling’ rather than the leader.”	Divide into small groups so that the leader or members of the small group do the ‘experience labeling.’	<i>Contents</i>
“The way readers read the observer exercises can interfere with observation.”	To minimize instruction, use voice-recorded material.	<i>Methods</i>
“Overall, time is running out. And the ‘trick it’ dialog is less connected in the context of the session.”	Subtract the ‘trick it’ dialog activity	<i>Contents</i>
“During the value session, it is necessary to explain values a bit when working on the assignment of ‘a value story paper.’”	Change the name of the record sheet to ‘My Dream Story of Life’ and explain the area and contents to be recorded.	<i>Contents</i>
There is not enough time to complete the ‘Goals, actions, obstacles’ log.	After considering high priority, do the top priority tasks first, and then the rest is charged as a task.	<i>Contents</i>
“Each of the four metaphors to explain the willingness to experience has its point, but it can be overlooked and give a feeling of overlap.”	It is necessary to write the points of each metaphor on the board so that they can grasp the contents more clearly. (In the analogy order willingness = choice, withstand, welcome, for value)	<i>Methods</i>
“The beginning of the session was not smooth.”	The introduction section summarizes the contents of the last session and informs you of the main elements of today's session so that it can be connected. Group leaders plan to spend more time in the introduction (about 20 minutes).	<i>Contents</i>
“A plan is needed to increase the task implementation rate.”	Gives objectives, detailed explanations, and examples when assigning assignments. Create a checklist for the integrity of the assignment so that the progress of the assignment can be seen at a glance and share what was difficult during the assignment at the beginning of the session.	<i>Methods</i>
“In some cases, participants may not be able to use their daily experience journal	Let participants submit their records and received feedback and guidance from the leader	<i>Contexts</i>

records properly, and they need guidance.”		
“The leader's explanation tended to be longer when concepts were confused, and people are not on the same page of understanding concepts.”	If group members are confused, allow time to share rather than lengthen explanations and keep them running through metaphors, games, and activities.	<i>Concepts</i>
“As it is a structured program, the opportunity to talk freely among group members during the process does not immediately occur, which makes it uncomfortable and frustrating.”	“Clarify the structure of the program so that you can start accepting the limitations of the structured program, and tell them in advance that if uncomfortable feelings come up, you can use it as an opportunity to talk and see your inner experience.”	<i>Goals</i>
“Overall, it was not enough to cover everything due to lack of time.”	“Each session is increased by 30 minutes for a total of 20 hours.”	<i>Methods</i>

Table 4

Manuals Used in RCT Studies

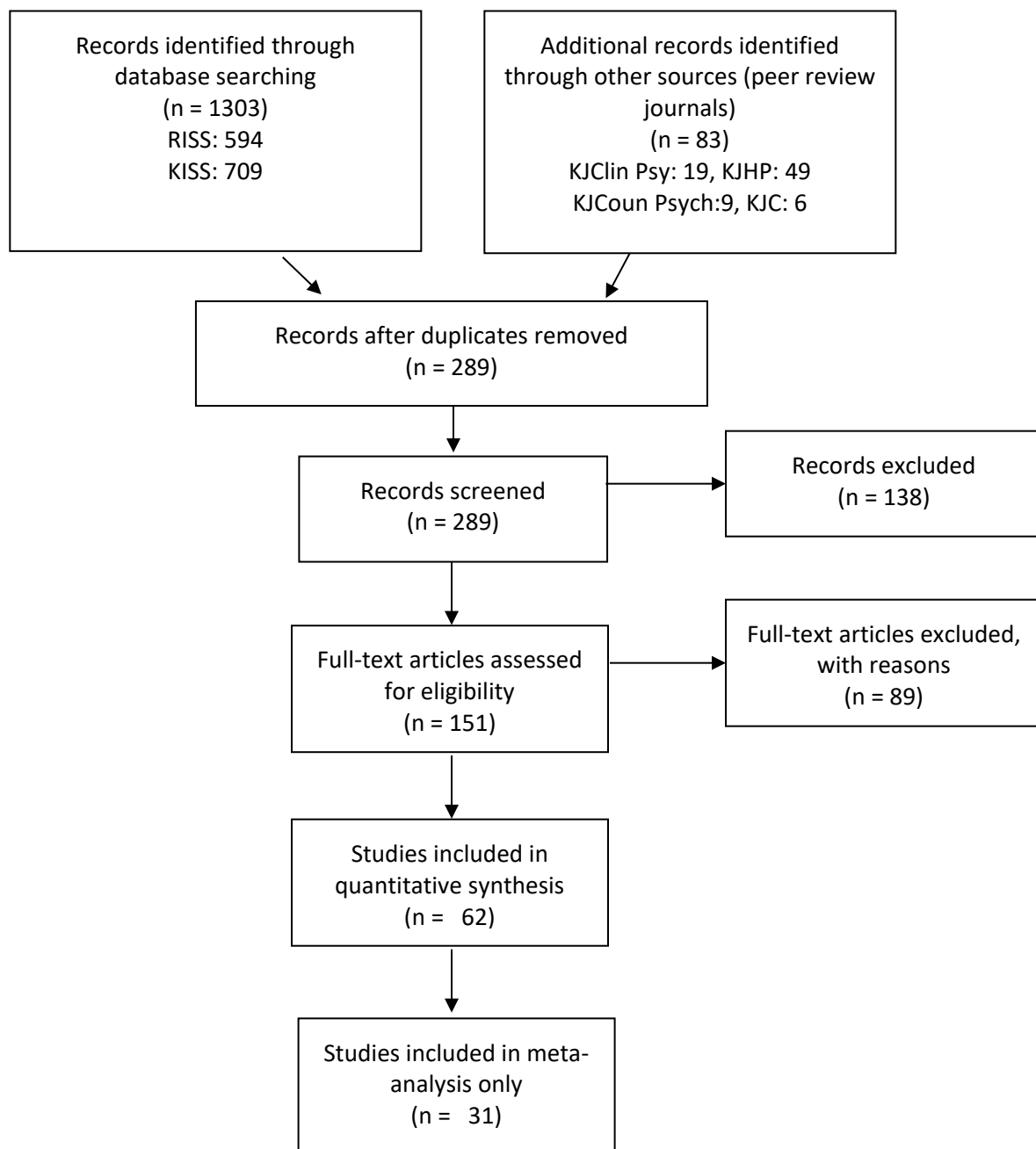
Authors (year)	Manuals
Baek JI & Seo (2018)	Researchers developed a program, consulted with professionals, did pilot study, revised it, and re-consulted with professionals.
Cho HA (2013)	Moon's protocol / Lee JH's thesis (2010)
Cho HJ (2012)	Germer (2009)/ O JE's book (2009)
Choi YY & Son (2011)	Moon's protocol/ Kim Miha's dissertation (2007) which was published in a peer-reviewed journal in 2011
Heo SM & Lee BK (2016)	Moon's protocol
Heo YS & Son (2013)	Moon's protocol
Hong MN & Son (2015)	Moon's protocol
Hwang SO & Park SH (2010)	Moon's protocol
Jang SY & Son (2012)	Moon's protocol/ Lee SE's thesis (2010)
Jo YJ & Son (2013)	Moon's protocol/ Wilson, Hayes, & Byrd (2000)
Joo SJ & Son (2015)	Moon's protocol
Jung MJ, La, & Son (2017)	Moon's protocol/ Hayes & Smith (2005)/Hayes & Walser (2007) / Ciarrochi & Bailey (2008)
Kim AR & Son (2015)	Moon's protocol/ Greco & Hayes (Korean version; 2012)/ Hayes (Korean version; 2010)
Kim DH & Son (2016)	Moon's protocol
Kim HY & Kim DY (2012)	Moon's protocol/ Lee SY's dissertation (2009)
Kim JE & Son (2012)	Moon's protocol
Kim JM & Son (2013)	Moon's protocol
Kim MO & Son (2013)	Moon's protocol
Ko YJ & Kim JM (2015)	Moon's protocol
Lee JH & Son (2013)	Moon's protocol /Blackledge (2004)
Lee JY & Son (2009)	Moon's protocol/ Kim Miha's dissertation (2007) which was published in a peer-reviewed journal in 2011
Lee KH (2017)	Moon's protocol
Noh PR & Son (2014)	Moon's protocol
Oh JE & Son (2018)	Moon's protocol
Ro JY, Kang HJ, & Son (2016)	Moon's protocol
Ryoo MK & Kim JC (2016)	Researchers developed a program and consulted with professionals in South Korea conducted pilot, consult again after the pilot, revised the program
Seo MJ & Kim DY (2012)	Moon's protocol
Shin JS & Lee BK (2018)	Wetherell et al. (2011)

Song HJ & Son (2011)	Moon's protocol/ Lee JY and Son CN (2009)
Yoo MR & Son (2011)	Moon's protocol
Yu HG & Son (2016)	Moon's protocol

Appendix B: Figures

Figure 1.

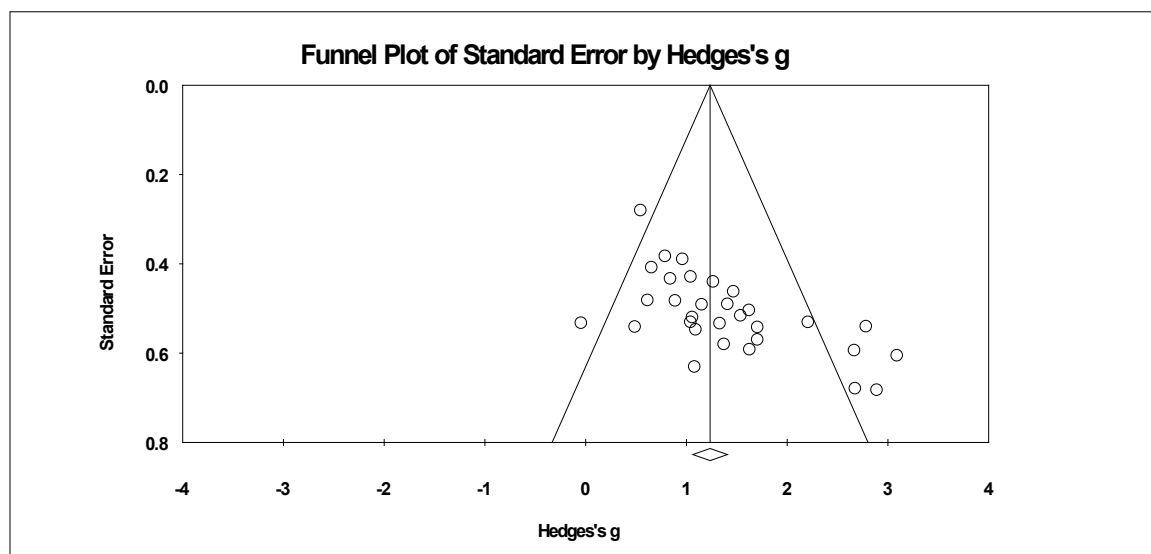
Inclusion process of diagram for Study 1 and 2



Note: When RISS and KISS were used, search terms significantly overlapped each other. After removing duplicates among existing overlapping results, 289 of articles were obtained for the further review.

Figure 2.

Funnel plot



Appendix C: Coding manual

Coding Manual

All data will be compiled in a excel file.

- Study Information
 1. Article Number: Record the assigned article number
 2. Title: Record the title of the study
 3. Year: Record the 4-digit year of publication
 4. Authors: Record the authors' family names and first names (initial only) of the study
 5. Types of study: Record types of study
 - 1) RCT study
 - 2) Quasi-experimental study
 - 3) Open trial study
 - 4) Laboratory study

- Study Characteristics
 1. Participant Number: Record number of participants that listed in the study
 2. Recruitment Criteria: Type recruitment criteria that used by study.
 3. Sample Type: Record either Clinical and subthreshold or Non-clinical
 - 1) Clinical and subthreshold: defined as participants who were officially diagnosed with psychological disorders or selected by high scores from the recruitment criteria (cutoff ± 1 SD or 30% highest or lowest; depends on the measure construct).
 - 2) Non-clinical: defined as all sample type except the "Clinical and subthreshold"
 4. Sex: (% of female): Record the rate of female participants
 5. Mean Age: Record the reported mean age of the study
 6. Sample category: Record one of the three below
 - 1) University students
 - 2) Below 18 years or from elementary to high school students
 - 3) Community sample
 7. Attrition N: Record numbers of attrition (defined as drop out number after randomization).

- Intervention Characteristics
 1. Compare group: Record comparison groups of study
 - 1) ACT vs WL (WL: defined as waitlist and no-treatment group)
 - 2) ACT vs CBT
 - 3) ACT vs Other
 2. Session Number (and session duration and frequency): List a total number of sessions and session duration and frequency into "(.)."

3. Treatment format: Record group format one of the two below
 - 1) Group
 - 2) Individual
 4. Therapist experience: Record one of the three below
 - 1) Graduate student
 - 2) Ph.D. professional
 - 3) Masters' degree professional
- Methodology
 1. Effect size data type: Record reported data type of effect size
 - 1) M, SD
 - 2) F test

※ *All quantitative data from RCT studies will be coded in a separate excel file. Each condition's Mean scores and Standard Deviation, participants numbers will be recorded per assessment-points. This process will be repeated per each measurement.*
 2. Measures: List all measures that used in the study
 3. Assessment point: Record one of the two below
 - 1) Pre and Post
 - 2) Pre, Post, and Follow-up
 - a. When reporting follow-up, record time-frame as well (i.e., 4-week, 3 months)
 - Outcomes
 1. Predicted outcomes: Color predicted outcomes by authors as purple in the "Measurement" column
 2. Primary outcomes: List primary outcome(s) based on the two criteria
 - 1) Outcome that was identified as the primary outcome in the manuscript (should be 1-2 max and invalid if more)
 - 2) Outcome that is closest to the targeted psychosocial problem area (symptom measure are okay to use, but functioning/behavioral measures are ideal if available)
 3. Process outcomes: List psychological inflexibility outcomes that are measure by AAQ-related measures.
 - 1) AAQ-16 scores
 - 2) AAQ-II scores
 - 3) None
 4. Secondary outcomes: outcomes that are not primary and process outcomes
 5. Problem Area: defined as broad psychosocial issues

Appendix D: Curricular vita

Curriculum Vitae

Woolee An

2240 Kuhio Ave,
 Royal Kuhio #2808
 Honolulu, Hawaii 96815
 (435) 890-5383

wooleean@aggiemail.usu.edu

Revised 11/01/2020

Education

- | | |
|---|--|
| Ph.D.
08/2014-12/2020
(Anticipated) | <u>Utah State University</u>
Logan, UT, USA
Combined Clinical and Counseling Psychology Program
(APA accredited)
Dissertation: <i>A Systematic review and meta-analysis of Acceptance and Commitment Therapy in South Korea</i>
Chair: Michael E. Levin, Ph.D. |
| Pre-doctoral
internship
08/2019-07/2020 | <u>University of Hawai'i at Mānoa</u>
Honolulu, HI, USA
Counseling and Student Development Center
(APA accredited)
Supervisors: Allyson Tanouye, Ph.D./Kristen Tom, Psy.D./
Hannah Im, Psy.D. |
| M.S.
08/2012-12/2014 | <u>Missouri State University</u>
Springfield, MO, USA
Clinical Psychology
Thesis: <i>Cross-cultural comparison of values in Acceptance and Commitment Therapy with expressive writing paradigm in the United States and South Korea</i>
Chair: Ann Rost, Ph.D. |
| B.A.
02/2002-02/2006 | <u>Sahmyook University</u>
Seoul, South Korea
Counseling (<i>Summa Cum Laude</i>) |

Membership in Professional Associations

Association for the Contextual Behavioral Science (ACBS)
 Asian American Psychological Association (AAPA)
 Korean Psychologists Network (KPN)

Scholarships & Awards

02/2020	SEED IDEAS grant (\$500), University of Hawaii at Manoa
07/2018	Graduate school travel fund (\$400), Utah State University
07/2018	Psychology department travel fund (\$400), Utah State University
07/2018	Krantz travel fund (\$350), Utah State University
10/2017	Krantz travel fund (\$500), Utah State University
10/2013	Thesis funding award (\$500), Missouri State University
09/2005	Honors Scholarship, Sahmyook University
09/2005	Student's association Scholarship, Sahmyook University
09/2004	Honors Scholarship, Sahmyook University
09/2004	Student's association Scholarship, Sahmyook University
03/2004	Honors Scholarship, Sahmyook University
09/2003	Honors Scholarship, Sahmyook University
03/2003	Honors Scholarship, Sahmyook University

Clinical Experience

08/2019-07/2020	<p>Doctoral psychology intern, Health Service Psychology Counseling and Student Development University of Hawai'i at Mānoa Responsibilities: intake interviewing, initial consultation, individual therapy for university students and student-athletes from diverse backgrounds, co-leading Multicultural Women's group, crisis intervention, crisis on-calls (Counselor-In-Residence program), outreach, providing supervision to a practicum trainee, case management, case presentation, intern project, various seminar and didactic training, organizing and leading workshops. Supervisor: Allyson Tanouye, Ph.D., Kristen Tom, Psy.D., Hannah, Im Psy.D. Obtained 2000 internship hours by July 31, 2020</p>
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- 01/2019-06/2019 Student therapist, Clinical Assistantship in Clinical Psychology
Clinical Mental Health Services for Student-Athletes
Utah State University Athletic Department
Responsibilities: intake interviewing, individual therapy for USU student-athletes with depression, anxiety, eating disorder, OCD, suicidal thoughts, life-transition and injury issues; attended weekly supervision and bi-weekly multidisciplinary meeting
Supervisor: Michael P. Twohig, Ph.D.
Hours: Direct 95 / Supervision 22 / Indirect: 156.5
- 08/2016-12/2018 Student therapist, Practicum in Clinical Psychology
Treatment of Anxiety and Related Disorders
Psychology Community Clinic, Utah State University
Responsibilities: intake interviewing, individual therapy, and psychodiagnostic assessment with community-based adolescents and adults with anxiety and related disorders; attended weekly supervision
Supervisor: Michael P. Twohig, Ph.D.
Hours: Direct 373 / Supervision 113 / Indirect 646
- 08/2016-05/2017 Student therapist, Practicum in Clinical Psychology
Psychology Community Clinic, Utah State University
Responsibilities: intake interviewing, individual therapy, and psychodiagnostic assessment with an adolescent and adult community population with anxiety and related disorders supported by weekly supervision and didactic training
Supervisor: Renee Galliher, Ph.D.
Hours: Direct: 55 / Supervision: 25 / Indirect: 93
- 08/2015-05/2016 Student therapist, Practicum in Clinical Psychology
Counseling and Psychological Services, Utah State University
Responsibilities: intake interviewing, individual therapy, co-leading stress management groups, and outreach; attended workshop and weekly didactic training and supervision
Supervisor: Eri Bentley Ph.D., LuAnn Helms, Ph.D., Kayla Zeal, M.A. (intern supervisor)
Hours: Direct 83 (Group: 12, Outreach 4)/ Supervision 34.25/ Indirect 200
- 08/2014-05/2015 Student therapist, Integrated Practicum in Counseling Psychology
Practicum
Utah State University Community Clinic

Responsibilities included: Intakes, evaluations, assessments, report writing, and individual therapy.

Supervisor: Susan Crowley, Ph.D. Julie Pelletier, Ph.D.

Hours: Direct 82.5/ Supervision 49/ Indirect: 264

08/2013-12/2013 Practicum student, Missouri State University
National Alliance on Mental Illness (NAMI), Southwest Missouri,
Springfield, MO
Responsibilities included: support group, psychoeducation group,
interacting with clients, observation, and events preparation.
Supervisor: Patricia Click, M.A.
Hours: Direct 110 / Supervision 11

Other Clinical Experience

2006-2010 Smoking Cessation Counselor
Public Health Center of the City of Seoul, South Korea
Responsibilities: individual therapy, nicotine replacement therapy,
maintenance group, psychoeducational blog updates, smoking
cessation related workshop in schools and companies in Seoul,
South Korea.

Research Experience

2014-Present Graduate student researcher
Supervisor: Michael E. Levin, Ph.D. / Michael P. Twohig, Ph.D.
USU ACT Research Group/ Contextual Behavioral Science Lab
Utah State University, Logan, UT
Responsibilities included: assisted with development and design of
research studies, questionnaire construction, IRB submission and
modifications, data collection, data entry, analysis, and
dissemination of information via presentations, and articles

01/2015-05/2015 Research Assistantship
Supervisor: Michael E. Levin, Ph.D.
Contextual Behavioral Science Lab
Utah State University, Logan, UT

Involved in initiating new research project using a mobile app, the Personal analytics Companion Mobile (PACO)
 Responsibilities included: IRB proposal submission, organizing questionnaires

- 08/2012-05/2014 Research Assistantship
 Supervisor: Ann D. Rost, Ph.D.
 ACT and Health Lab
 Missouri State University, Springfield, MO
 Responsibilities included: data collection, data analysis, organizing tasks, training undergraduate research assistant, developing new research projects, IRB submission and modifications, lab meeting
- 08/2012-05/2014 Research Assistantship
 Supervisor: Melissa D. Fallone, Ph.D.
 Infant Behavioral Lab
 Missouri State University, Springfield, MO
 Responsibilities included: video-data coding, organizing tasks, training undergraduate research assistants

Peer Reviewed Articles

Levin, M.E., **An, W.**, Davis, C. & Twohig, M.P. (2020). Evaluating acceptance and commitment therapy and mindfulness-based stress reduction self-help books for college student mental health. *Mindfulness* 11, 1275-1285.

Lee, E. B., Ong, C. W., **An, W.**, & Twohig, M. P. (2018). Acceptance and commitment therapy for a case of scrupulosity-related obsessive-compulsive disorder. *Bulletin of the Menninger Clinic* 82(4), 407-423.

Levin, M. E., Haeger, J. A., **An, W.**, & Twohig, M. P. (2018). Comparing cognitive defusion and cognitive restructuring delivered through a mobile app for individuals high in self-criticism. *Cognitive Therapy and Research* 42(6), 1-12.

Lee, E. B., **An, W.**, Levin, M. E., & Twohig, M. P. (2015). An initial meta-analysis of Acceptance and Commitment Therapy for treating substance use disorders. *Drug and alcohol dependence* 155, 1-7.

Suh, K. H., & **An, W. L.** (2009). Dementia caregivers' stress, stress response, and physical/mental health: focused on the moderate effect of self-efficacy. *Journal of Korean Society of Stress Medicine*, 17(2), 111-20.

Manuscripts under review/ in preparation

An, W., Dotterer A. M., Park, S. & Levin, M. E. (Under Review). Exploring the relationship between discrimination and psychosocial outcomes among college students.

Levin, M.E., Krafft, J., **An, W.**, Ong, C.W. & Twohig, M.P. (Under Review). Examining the daily effects of cognitive defusion and restructuring delivered through mobile apps for self-criticism.

An, W., Petersen, J.M., & Twohig, M.P. (in preparation). Case study of Acceptance and Commitment Therapy (ACT) and Exposure Response Prevention (ERP) for Emetophobia

An, W. & Rost A. D., (in preparation). Cross-cultural comparison of values in Acceptance and Commitment Therapy with expressive writing paradigm in the United States and South Korea

Presentations

Davis C., **An W.**, Twohig, M.P. & Levin, M.E. (November 2019). A Randomized Controlled Trial of Mindfulness-based Stress Reduction versus Acceptance and Commitment Therapy Bibliotherapy for College Student Mental Health. Poster presentation at the annual convention of the Association for Association for Behavioral and Cognitive Therapies in Atlanta, Georgia

Li, Zhu, Chong, Wang, & **An W.** (July 2018). How do we ACT in Asia? - The contextualization of ACT in Eastern Asian culture. Symposium presentation at the annual convention of the Association for Contextual Behavioral Science in Montreal, Canada

An, W., Dotterer A. M., Park, S., & Levin, M. E. (July 2018). Exploring the relationship between discrimination and psychosocial outcomes among college students. Poster presentation at the annual convention of the Association for Contextual Behavioral Science in Montreal, Canada

An, W. & Rost A. D., (July 2016). Cross-cultural comparison of values in Acceptance and Commitment Therapy with expressive writing paradigm in the United States and South Korea. Poster presentation at the annual convention of the Association for Contextual Behavioral Science in Seattle, WA.

Teaching Experience

08/2020-Present	Teaching Assistantship Supervisor: Scott Bates, Ph.D. Utah State University, Logan, UT Psychology Department Teaching Assistant Responsibilities included: mentoring undergraduate research projects, reviewing project materials, reviewing course materials, grading, leading discussion groups, holding virtual office hours.
08/2016-12/2018	Teaching Assistantship Supervisor: Carrie Madden, M.S. Utah State University, Logan, UT PSY 1100: Lifespan Development (on-campus & online) Responsibilities included: Office hours, grading, leading discussion groups, conducting course lab sessions.
07/2016	Instructor Sahmyook University, Seoul, South Korea Introductory Psychology (summer semester) Responsibilities included: Lecturing, preparing presentation materials, developing exams, office hours, grading, and discussion groups.

08/2015-05/2016	Teaching Assistantship Supervisor: Kathryn Sperry, Ph.D. Utah State University, Logan, UT PSY 1010: Introductory Psychology (on-campus & online) Responsibilities included: Office hours, grading, leading discussion groups, conducting course lab sessions.
08/2014-5/2015	Teaching Assistantship Supervisor: Christopher Johnson, Ph.D. Utah State University, Logan, UT PSYC 3500: Scientific Thinking & Methods in Psychology Responsibilities included: Office hours, grading, consultation of undergraduate students' projects, and one-on-one phone meeting (distance education course)
08/2014-12/2014	Teaching Assistantship Supervisor: Rebecca Blais, Ph.D. Utah State University, Logan, UT PSYC 3210: Abnormal Psychology Responsibilities included: Office hours, grading, leading discussion groups, providing exam related study sessions, and guest lecturing. Guest lecture: Disorders of aging (December 2014)

Training Received

04/20/2019	One-day ACT workshop: Focused Acceptance and Commitment Therapy: The Basics and Beyond Speaker: Kirk Strosahl, Ph.D.
09/30-10/01/2018	Two-day ACT workshop: Advanced ACT: Doing Experiential Work Without Exercises Speaker: Matthieu Villatte, Ph.D. / Jennifer Villatte, Ph.D.
07/24-07/25/2018	ACT workshop: Understanding ACT Assessment and Treatment: Not Just for Beginners Speaker: Kelly Wilson, Ph. D.
09/01-09/02/2017	Two-day ACT workshop: Day 1: Introduction to ACT and Day 2: Experiential ACT Workshop Speaker: Michael Twohig, Ph. D.

04/15/2016 22nd Annual Counseling and Psychological Services
Conference at Utah State University: Innovations in
Clinical Assessment of Suicidal Patients
Speaker: David A. Jobes, Ph. D., ABPP

Foreign Languages

Korean (first language)

Certificates

09/2011 TESOL/TESL/TEFL Certificate, Oxford Seminars
2006 Smoking Cessation Counselor Certificate in South Korea

Service Activities

01/2016-present Association of Contextual Behavioral Science - Korean chapter
Assisting with the creation of a Korean chapter of this organization
02/16/2015 Volunteer translator (English-Korean) for Autism assessments
Center for Persons with Disabilities (CPD), Utah State University

Professional References

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